

## Catalog Home

# 2017-18 Undergraduate & Graduate Academic Catalog



## Disclaimers

The provisions of this publication are subject to change without notice and do not constitute an irrevocable contract between any student or applicant for admission and Purdue University Northwest. The University is not responsible for any misrepresentation of its requirements or provisions that might arise as a result of errors in the preparation of this publication.

Purdue University Northwest has reserved the right to add, amend, or repeal any of its regulations, rules, resolutions, standing orders, and rules of procedures, in whole or in part, at such times as it may choose. None shall be construed, operate as, or have the effect of any abridgement or limitation of any rights, powers, or privileges of the Board of Trustees.

Every effort has been made to assure the accuracy of the information in this publication. Students are advised, however, that such information is subject to change. Therefore, they should consult the appropriate academic department or administrative offices for current information.

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# Chancellor's Welcome

## Dear Student,

**Welcome!** On behalf of our Purdue University Northwest family, I am pleased you are pursuing your university degree at PNW—a comprehensive, regional university of two Northwest Indiana campuses located 35 miles apart in Hammond and Westville.

In many ways, as a university of 70 degree programs that serves some 14,000 students, Purdue Northwest is both big enough and small enough to suit your needs and desires. PNW also is close enough, yet far enough to enable you to access doors of opportunities, whether exploring cosmopolitan Chicago, the ecological beauty of Lake Michigan and its dunes-filled shore line, or diverse job and career opportunities with industries and communities that define a changing Northwest Indiana.

PNW takes pride in being a student-centered university, strategically committed to academic excellence. Purdue Northwest also distinguishes the education it provides with experience-rich, hands-on learning. That is, you will apply traditional classroom, laboratory and textbook lessons within a real world environment that allows you to learn by doing!

As a student enrolled at our dual-campus university, you may take advantage of a broad range of comprehensive learning experiences. As you do so, supporting your success on our campuses and beyond becomes our top priority. Throughout your Purdue Northwest experience, faculty and staff members across our academic and student affairs teams will build a relationship to help you when you need it most.

Yes, we will push you to work hard, but we also have an infrastructure in place designed to help you become the best you can be. We are here to support your success. Welcome to the PNW family!

Sincerely,

Thomas L. Keon

## About Purdue University Northwest

2016-17 marks the first academic year of Purdue University Northwest. The comprehensive, Northwest Indiana-based institution is a unification of the former Purdue University Calumet of Hammond and Purdue University North Central of Westville. A single university of two campuses located 35 miles apart just outside the Chicago metropolitan area, Purdue Northwest is part of the internationally-respected Purdue University system, Indiana's land grant institution. Purdue Northwest was established to better serve students and the Northwest Indiana region.

## History

The genesis of Purdue Northwest through its two campuses emerged during World War II when Purdue University in cooperation with the federal government offered technical classes to Northwest Indiana production workers in response to war effort needs. When the war ended, higher education took on new meaning in a region of returning soldiers and others eager to advance their futures.

Purdue introduced degree credit courses in a variety of facilities in and around Hammond in 1946 and in Michigan City and La Porte as early as 1949.

Subsequently, land Purdue acquired through the Ross-Ade Foundation paved the way for development of two campuses—one south of Michigan City near Westville and the other in Hammond's Woodmar neighborhood. The first building on the Hammond location opened in late 1951. A permanent Westville location introduced classes in fall of 1967.

Both campuses grew and developed into comprehensive regional universities, collectively awarding more than 67,000 undergraduate and graduate degrees through spring 2016 and enrolling some 15,000 students during the 2016-2017 academic year, while also responding to the professional, cultural and economic needs of Northwest Indiana and beyond.

## Emergence of Purdue University Northwest

Purdue University announced February 26, 2014 that Purdue University Calumet and Purdue University North Central would unify their respective administrations. Through a detailed unification process, both campuses would be preserved and administrative, academic oversight and other functions would be combined.

The unification of two campuses into one university would enable more resources to be reallocated to advance educational quality, student success, efficiency and a more impactful response to specific needs of Northwest Indiana. In short, an extraordinary university of two strong campuses would emerge that would better serve students, families, business, industry and economic development.

The Purdue Board of Trustees approved Purdue University Northwest as the name of the unified institution in July 2014. Purdue Trustees also approved a plan in October 2015 to reorganize the 11 academic colleges of Calumet and North Central into six Purdue Northwest colleges. The establishment of Purdue University Northwest became official when the Higher Learning Commission granted approval March 4, 2016.

## Purdue Northwest Senior Leadership

A single Board of Trustees governs the entire Purdue University system through the President of the University. The Chancellor of Purdue University Northwest is the senior administrative officer on campus and reports to the President of Purdue University. Serving the Chancellor as senior administrators are:

- Vice Chancellor for Academic Affairs and Provost – responsible for all academic programs and the Center for Learning and Academic Success.
- Vice Chancellor for Finance and Administration – responsible for the business affairs of the university, including budget and finance, human resources, buildings and grounds, and university police.
- Vice Chancellor for Institutional Advancement – responsible for advancing the university and overseeing alumni relations, communications, fund raising, university and community relations, and marketing.

- Vice Chancellor for Enrollment Management and Student Affairs – oversees the many services and functions the university offers to advance student success and nurture student life and community on campus, including enrollment related services.
- Vice Chancellor for Information Services – responsible for connecting the changing, emerging needs of technology with the knowledge generated through library resources.
- Athletic Director – responsible for administering all aspects of the university's 13-team intercollegiate athletic program.

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- Regina Biddings-Muro, Vice Chancellor for Institutional Advancement
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- K. Chris Holford, Dean, College of Engineering and Sciences
- Lisa Hopp, Dean, College of Nursing
- Niaz Latif, Dean, College of Technology
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Carmen Panlilio, Vice Chancellor for Enrollment Management and Student Affairs

- Lisa Goodnight, Associate Vice Chancellor for Student Affairs and Senior Dean of Students
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- Michael Biel, Executive Director of Financial Aid
- Cheryl Arroyo, University Registrar
- Sandra Steele, Director of EMSA Reporting & Operational Intelligence

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- Tammy Guerrero, Director of University Libraries
- Katie Gutierrez, Assistant Director Information Security Services
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- Paul Johansen, Executive Director of Enterprise Applications Services
- Stefan Yanef, Budget and Financial Analyst
- Heather Zamojski, Assistant Vice Chancellor for Learning Technologies

# Non Discrimination Policy Statement

Purdue University is committed to maintaining a community which recognizes and values the inherent worth and dignity of every person; fosters tolerance, sensitivity, understanding, and mutual respect among its members; and encourages each individual to strive to reach his or her own potential. In pursuit of its goal of academic excellence, the University seeks to develop and nurture diversity. The University believes that diversity among its many members strengthens the institution, stimulates creativity, promotes the exchange of ideas, and enriches campus life. Purdue University views, evaluates, and treats all persons in any University related activity or circumstance in which they may be involved, solely as individuals on the basis of their own personal abilities, qualifications, and other relevant characteristics. Purdue University prohibits discrimination against any member of the University community on the basis of race, religion, color, sex, age, national origin or ancestry, genetic information, marital status, parental status, sexual orientation, gender identity and expression, disability, or status as a veteran. The University will conduct its programs, services and activities consistent with applicable federal, state and local laws, regulations and orders and in conformance with the procedures and limitations as set forth in Purdue's Equal Opportunity, Equal Access and Affirmative Action policy Executive Memorandum No. D-1, which provides specific contractual rights and remedies. Additionally, the University promotes the full realization of equal employment opportunity for women, minorities, persons with disabilities and veterans through its affirmative action program.

Any question of interpretation regarding this Nondiscrimination Policy Statement shall be referred to the Vice President for Ethics and Compliance for final determination.

## Title IX

"No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subject to discrimination under any educational program or activity receiving Federal financial assistance." - Title IX

Title IX is part of the Education Amendments of 1972 to the 1964 Civil Rights Act and is enforced by the U.S. Department of Education. This federal law prohibits discrimination on the basis of sex in education programs or activities operated by recipients of federal financial assistance. Title IX applies to all participants of such programs, including students, parents and faculty/staff members. The purpose of Title IX is to help foster safe and respectful University environments that better protect students, faculty and staff from incidents of sex-based discrimination and sexual harassment, including sexual violence, relationship violence and stalking.

As Purdue University Northwest Title IX Officer for the Hammond location, Linda B. Knox, Director for the Office of Equity & Diversity, is responsible for coordinating Purdue University's compliance with Title IX, including overseeing all complaints of sex discrimination and identifying and addressing any patterns or systemic problems that arise during the review of such complaints. Questions or concerns may be directed as follows:

Linda B. Knox

Director, Office of Equity & Diversity

Lawshe Hall, Room 231

2200 169th Street

Hammond, IN 46323-2094

219-989-2337 (office); 219-989-4187 (fax)

(219) 989-3169

[linda.knox@pnw.edu](mailto:linda.knox@pnw.edu)

Equity Diversity & Inclusion Web site: <http://www.pnw.edu/diversity/title-ix/>

As Purdue University Northwest's Title IX Coordinator for the Westville location, Laura Odom, Associate Director of the Office of Institutional Equity and Training, is responsible for coordinating the University's compliance with Title IX, including overseeing all complaints of sex discrimination and identifying and addressing any patterns or systemic problems that arise during the review of such complaints. Questions or concerns may be directed as follows:

Laura Odom

Associate Director of Office of Institutional Equity (OIE)

Schwarz Hall, Room 25C

1401 S. U.S. Hwy 421

Westville, IN 46391

(219) 785-5545  
odoml@pnw.edu

In light of recent reports concerning a university's response to allegations of child abuse, you are reminded that under Indiana law, each person over the age of 18 has a duty to report child abuse or neglect. In the event of an emergency, call 911. If it is not an emergency, immediately alert the police or Child Protective Services (1-800-800-5556). Thank you for your commitment to the safety of children on our campuses.

## Your Campus, Your Safety

Your Campus, Your Safety - Purdue University Northwest's annual security and fire safety reports are available online. This report is required by federal law and contains policy statements and crime statistics for Purdue University Northwest. The policy statements address Purdue University Northwest's policies, procedures and programs concerning safety and security (i.e., policies for responding to emergency situations and sexual offenses). Three years' worth of statistics are included for certain types of crimes that were reported to have occurred on campus, in or on off-campus buildings or property owned or controlled by the school and on public property within or immediately adjacent to the campus. The reports are available online by campus location:

### **Hammond Campus Safety Report**

You may also request a paper copy from the Police Department, located in the University Police Building (just south and east of the 169th St. entrance).

### **Westville Campus Safety Report**

You may also request a paper copy from the Police Department located at the Physical Facility/Campus Police Building Room 101



## Calendars

Academic Calendar - <http://www.pnw.edu/registration/academic-calendar/>

University Calendar - <http://www.pnw.edu/calendar/>

## Academics

- Mission, Vision, Values
- Overarching Strategy and Goals
- Accreditation
- Transfer Single Articulation Pathways (TSAP)

Purdue Northwest offers some 70 undergraduate and graduate degree programs of study. The university's six academic Colleges are:

- Business
- Engineering and Sciences
- Humanities, Education and Social Sciences
- Nursing
- Technology
- Honors

## Mission Vision Values

**Mission:** Purdue University Northwest, in the land grant tradition of learning, discovery and engagement, provides high quality, affordable undergraduate and graduate education to students of Northwest Indiana and beyond. We create a welcoming environment that promotes critical inquiry through experiential learning, faculty scholarship, civic engagement and community partnerships.

**Vision:** Purdue University Northwest will be the institution of choice in Northwest Indiana and beyond as the center for education, innovation, economic development and culture.

**Values:** The students, faculty, staff, alumni and entire Purdue University Northwest community:

- Embody a commitment to excellence in all we do
- Foster a culture that supports growth and success for students, faculty and staff
- Create a welcoming, collegial environment that celebrates diversity
- Demonstrate respect, caring, dignity and inclusion for all
- Promote global citizenship, through learning, interconnectedness, strong stewardship and focusing on improving social outcomes
- Promote growth and mutual success through developing and leveraging partnerships throughout the area
- Act with honesty and integrity, adhering to the highest ethical standards of personal and professional behavior, in communicating, learning, teaching, research and public service.
- Accept personal and institutional responsibility for everything we do
- Innovate to increase lifelong learning
- Demonstrate pride in our university, community, ourselves and one another

## Overarching Strategy and Goals

Purdue University Northwest will differentiate itself by offering world-class educational opportunities at an excellent value to all students; by attracting students who thrive in a welcoming, diverse, inclusive environment that promotes academic rigor; by supporting strong faculty and academic programs; by enhancing a vibrant university community; and by promoting the economic well-being of Northwest Indiana, the State, and society as a whole.

## Strategic Goals

1. **Student access and success** – Focus on academic, personal and career success and continually work to improve our resources so that qualified students have the opportunity and ability to thrive during their experience on campus and in their lives.
2. **Academic excellence** – Advance academic excellence, the foundation of all we do at Purdue Northwest. We are committed to maintaining and growing a rich teaching-learning environment through the recruitment, retention, and development of high-quality faculty and staff. Equally, we are committed to maintaining distinctive programs and developing quality programs designed to serve regional, national and global needs.

Degree programs, dedicated staff and university resources center on providing students opportunities and challenges as they prepare for future success.

3. **Learning through engagement and discovery** – Promote collaborative work, experiential learning and research to give students a rich learning environment that cultivates a lifetime of community involvement and leadership.
4. **Inclusivity and diversity** – Promote a university climate that is welcoming and diverse in which all individuals experience being a valued member of the community. Similarities and differences are accepted and respected. Our communication is collaborative and collegial.
5. **Community and business engagement** – Participate in productive partnerships between business and community organizations and Purdue University Northwest students, faculty and staff that offer opportunities for mutual benefit while strengthening the university and enriching society.
6. **Premier infrastructure** – Support a rich academic learning experience through physical resources, technology, processes, policies and practices.

## Accreditation

The Higher Learning Commission (click to view web page) - 230 South LaSalle St., Suite 7-500 Chicago, IL 60604-1411, accredits Purdue University Northwest. Telephone: 312-263-0456; Toll Free 800-621-7440

Specialty accreditors, with current names, phone numbers and website URLs, are listed here.

For further accreditation language, please visit the Accreditation and Assessment webpage.

## Transfer Single Articulation Pathways (TSAP)

In collaboration with state institutions in Indiana, the Indiana Commission for Higher Education (ICHE) has established this program so that students in selected majors may complete an associate's degree at an Indiana community college and transfer into a related field at a four-year public university in Indiana where credits earned for the associate's degree will apply toward the bachelor's degree. To take advantage of this program at Purdue, students must meet established admission criteria for the respective major, some of which are highly competitive or not available to transfer students because of popularity and limited capacity. For more information view "Single Articulation Pathways" on this ICHE web page.

**Click here for more information on Majors available through this program.**

## Transfer Single Articulation Pathways (TSAP)

In collaboration with state institutions in Indiana, the Indiana Commission for Higher Education (ICHE) has established this program so that students in selected majors may complete an associate's degree at an Indiana community college and transfer into a related field at a four-year public university in Indiana where credits earned for the associate's degree will apply toward the bachelor's degree. To take advantage of this program at Purdue, students must meet established admission criteria for the respective major, some of which are highly competitive or not available to transfer students because of popularity and limited capacity. For more information view "Single Articulation Pathways" on this ICHE web page.

### Ivy Tech Community College

- TSAP Biological Sciences, BS (PDF, link opens new window)
- TSAP Chemistry, BSCH (PDF, link opens new window)
- TSAP Computer Science, BS - Option 1 (PDF, link opens new window)
- TSAP Computer Science, BS - Option 2 (PDF, link opens new window)
- TSAP Early Childhood Education, BS (PDF, link opens new window)
- TSAP Elementary Education, BA (PDF, link opens new window)
- TSAP Electrical Engineering Technology, BS (PDF, link opens new window)
- TSAP Mechanical Engineering, BSME (PDF, link opens new window)
- TSAP Mechanical Engineering Technology, BS
- TSAP Nursing - Online RN to BSN (PDF, link opens new window)
- TSAP Psychology, BA (PDF, link opens new window)
- TSAP Psychology, BS (PDF, link opens new window)

### Vincennes University

- TSAP Biological Sciences, BS (PDF, link opens new window)
- TSAP Chemistry, BSCH (PDF, link opens new window)
- TSAP Nursing - Online RN to BSN (PDF, link opens new window)
- TSAP Psychology, BA (PDF, link opens new window)
- TSAP Psychology, BS (PDF, link opens new window)
- TSAP Sociology, BA (PDF, link opens new window)

## Admission to Purdue University Northwest

The Office of Undergraduate Admissions offers Open Houses, Instant Decisions Days (IDD) and Express Admission Days (EAD), and provides guided campus tours and pre-admissions counseling appointments. For more information please contact us at either of our campus locations:

Office of Undergraduate Admissions Lawshe Hall, Room 130  
Purdue University Northwest, Hammond Campus  
2200 169th St Hammond, Indiana 46323-2094  
Phone: (219) 989-2213 Toll-free: (855) 608-4600  
Office of Undergraduate Admissions, Schwarz Hall, Room 40  
Purdue University Northwest, Westville Campus  
1401 South US Highway 421  
Westville, IN 46391  
Phone: (219) 785-5505 Toll-free: (855) 608-4600

**Website:** <http://www.pnw.edu/admissions/>

**Information on Graduate Admissions** maybe found in the [Graduate School](#) section.

## First Time Degree-Seeking College Students

### What is a Freshman Applicant?

First Time Degree-Seeking College Student who has completed at least 6 semesters of high school course work or has graduated from high school and has not attended a college or university after graduation.

*Submit the following to be considered for admission:*

1. Completed Application, (A non-refundable \$25 application fee is required).
2. Official High School Transcript and/or GED Scores - Note: Domestic students with transcripts from international institutions must submit an official course by course evaluation of their foreign courses from a member of the National Association of Credential Evaluation Services (NACES).
3. SAT or ACT standardized test scores. For applicants whose high school graduation date was more than one year prior to their intended semester of enrollment, appropriate placement test results from the Testing Services Center at PNW will substitute for SAT or ACT scores.

#### *Acceptance*

Admission to Purdue University Northwest is based on demonstrated academic quality rank factors, which include a high school diploma (Core 40 diploma is required for applicants who graduated in 2011 and forward from an Indiana public high school) or GED, meeting subject matter requirements, grade average in degree-related subjects, as well as overall grade average, class rank, SAT or ACT test scores and the strength of the college preparatory program.

#### *Admissions Decisions*

The Office of Undergraduate Admissions will evaluate applications and make one of the following determinations:

1. **Direct Admission** - Applicants who meet all quality rank requirements for a particular program will be directly admitted into their choice of major and/or concentration.
2. **General Admission** - Applicants who DO NOT meet the requirements for a particular program may be offered general admission to the University.
3. **Denied admission** - Applicants will not be admitted to the university until adequate preparation for university work can be demonstrated. Conditional Admission is NOT offered.

Scholarship information is available at [pnw.edu/admissions-merit-scholarships](http://pnw.edu/admissions-merit-scholarships)

#### *Gap Year Policy*

Purdue Northwest allows for domestic freshman students to delay their enrollment for up to one year from their original admission term. Students seeking to extend a gap year beyond one year must reapply for admissions. If approved, you do not need to apply for admission again for the following term. The Admission Office will process all materials and keep your application on file for you. Should any of the information provided in your application change (coursework, address, etc.) you must contact the Admissions Office at 219-989-2213.

Students may pursue 11 or fewer credits during a gap year. If a student earns 12 or more credits, the freshman application will become invalid and a new transfer application for admission must be filed.

Any formally accepted freshman merit scholarships awarded through the Office of Undergraduate Admissions will be held for up to one year from the original admit tem. This scholarship extension is available to freshman applicant only.

# Degree-Seeking Transfer Students

## What is a Transfer Student?

Degree-Seeking student who has completed at least 12 college level credits after high school graduation from a regionally accredited institution of higher education.

*How transfer credit is established:*

- Purdue University Northwest accepts credit from regionally accredited institutions for college level classes in which the student has received a grade of C- or better. The University reserves the right to determine the transferability and acceptance of transfer credit. Grades from transfer courses do not transfer, only credits.
- Course equivalencies are determined by respective academic departments (e.g. math course equivalencies are determined by the Department of Mathematics)
- Transfer courses will be evaluated by an academic advisor on an individual basis to determine how credits will apply toward plan of study and graduation requirements.
- Purdue University Northwest accepts a maximum of 90 credits toward a baccalaureate degree from other regionally accredited colleges and universities.

*An applicant transferring from another college (non-Purdue campus) must submit the following items:*

- Completed application with a \$25 application fee (non-refundable)
- \$30 transcript evaluation fee (non-refundable)
- Official college transcripts from each institution of higher education attended
- Official high school transcript and/or, GED scores
- Domestic students with transcripts from international institutions must submit an official course by course evaluation of their foreign courses from a member of the National Association of Credential Evaluation Services (NACES)

*Transfer Student Admission Criteria*

The applicant must have at least 12 credit hours of college level course work after high school graduation with a cumulative grade point average of at least 2.0/4.0 from the last college attended. Some programs require a specific cumulative grade point average and pre-requisite transfer courses completed for transfer student admission.

*The Online Transfer Equivalency System*

Students and faculty can efficiently evaluate transferring course credit through the Purdue University Northwest Transfer Equivalency System. This system compares Purdue University Northwest courses with that of other colleges and universities. If a course is not listed in the report, it does not mean that the course is not accepted, it simply means that this course has not yet been articulated. Transfer credit is subject to departmental acceptance and distribution and equivalencies can be changed at any time.

Scholarship Information is available at [pnw.edu/admissions-merit-scholarships](http://pnw.edu/admissions-merit-scholarships)

## Re-Entry

### What is a Re-Entry Applicant?

A Purdue student who has not attended for one year or longer and left in good academic standing.

Applicants who have attended another college or university since their last semester at Purdue must submit official college transcripts before receiving an admission decision.

## Re-Admission

### What is a Re-Admission Applicant?

A person who has been dropped from any Purdue University campus for academic reasons.

- A student who is academically dismissed from Purdue University Northwest for the first time will be ineligible to enroll for at least one fall or spring semester
- A student who is academically dismissed for the second time will be ineligible to enroll for at least one year

- A student who is academically dismissed for a third time is ineligible to enroll for a future term and will not be re-admitted
- A student dropped by this rule must apply for re-admission by filing a Re-admission application.

## Indiana High School Dual Credit

Dual credit programs are partnerships between an individual high school or high school corporation and a particular college or university.

In Indiana, dual credit courses are those which high school students may take to earn both high school and college credits. Dual credit courses are taught by high school faculty or by adjunct college faculty either at the high school, at the college or university, or through on-line courses or distance education. Dual credit is one of several options a high school student may use to fulfill Core 40 diploma requirements with Academic Honors or Technical Honors.

Students wishing to fulfill Core 40 with Academic Honors or Technical Honors diploma requirements are encouraged to choose dual credit courses from either the Core Transfer Library (CTL) or from the courses listed by the Independent Colleges of Indiana (ICI). Courses chosen from both the CTL and ICI list of courses may maximize the chances for the transferability of credit for courses and also meet the dual credit requirements necessary for Core 40 with Academic Honors or Technical Honors.

If students choose a dual credit course NOT on the CTL or on the courses listed by ICI, they should contact the college they plan to attend to see if the course can be transferred to that institution. Indiana colleges and universities provide many opportunities for students to earn college credit while still attending high school. For more information and the latest details visit <http://www.transferin.net/High-School-Students/Dual-Credit.aspx>

## International Student Admission Requirements

The following documentation must be submitted in order to apply for an undergraduate program at Purdue University Northwest:

- **International Undergraduate Student Application.** Students who have not attended a previous university must submit a non-refundable \$25 application fee. Transfer students must submit a non-refundable application fee of \$55. This fee includes evaluation of all college transcripts.
  - Apply on-line, or download a paper copy, found on our website  
<http://www.pnw.edu/international/admissions/undergraduate-admissions/2/>
- **Beginner Student:** Original or attested copies of all transcripts, diplomas, certificates and mark sheets from all secondary schools attended. Documents should be mailed in a sealed envelope from the secondary school or the examination board. If the original document is not in English, include a certified, detailed English translation.
- **Transfer Student:** Original or attested copies of academic transcripts from all secondary and post-secondary schools attended, mailed in a sealed envelope from the examination board, secondary school, or university. If the original document is not in English, include a certified, detailed English translation.
- **Proof of English Proficiency-provide one of the following:** (tests should be taken within the past 2 years)
  - Test of English as a Foreign Language (TOEFL) 79 iBT, or 550 paper based exam
  - International English Language Testing System (IELTS) 6.5
  - Scholastic Assessment Test (SAT) Critical Reading 480 or higher (old); New SAT Reading Test 26
  - British Ordinary Level English Language Exam (GCSE/IGCSE) Grade of A or B in first language English
  - A minimum of 12 transferable credits from an accredited U.S.-based institution of higher education, including an English Composition course that is equivalent to Purdue University Northwest's English Composition course ENGL 10400. This equivalent course cannot be taken on-line, through distance learning, or correspondence courses for international admission purposes.

**You will need to provide evidence of financial support.** See details at:

<http://www.pnw.edu/international/admissions/undergraduate-admissions/3/>

If you did not take, or have low English test scores for entry into a degree-seeking program, you may still be eligible for admission to the Purdue University Northwest's **English Language Program (ELP)**, located at the Hammond campus. Upon successful completion of ELP, students are eligible to transition to their academic program (TOEFL or above English Proficiency scores will not be required upon successful ELP completion). Visit the website for more information and application materials:

<http://www.pnw.edu/english-language-program/>

<http://www.pnw.edu/english-language-program/how-to-apply/>

Purdue University Northwest must receive all required application materials, on or before the dates indicated below:

**June 1** - Fall Semester

**November 15** - Spring Semester

**April 1** - Summer Semester

Please mail your application materials to:

**Purdue University Northwest**  
**Office of International Undergraduate Admissions**  
**Classroom Office Building 176**  
**2200 169th Street**  
**Hammond, IN 46323**  
**USA**  
**Phone: 219-989-2609**  
**Fax: 219-989-8302**  
**Email: [iadmissions@pnw.edu](mailto:iadmissions@pnw.edu)**

For information on admission requirements for International Graduate Students please visit:

<http://academics.pnw.edu/grad-school/international-students/>

## The International Affairs Office

The International Affairs Office (IAO) is committed to further internationalizing Purdue University Northwest and supporting global awareness through the development of international partnerships and exchanges, study abroad opportunities, increased international student enrollment, and cross-cultural programming on and off campus. In order to achieve its goals, IAO is comprised of five main units:

**International Admissions**, reviews and processes international student applications, evaluates foreign credentials, guides and advises prospective international students, processes transfer credit, works with sponsored students and partners, and assists with development of international partnerships. <http://www.pnw.edu/international/admissions/>  
**International Students and Scholars (ISS)** provides international students with the appropriate support and advising on immigration matters in order to succeed in their academic, social, and cultural pursuits.

<http://www.pnw.edu/international/immigration/>

**International Programs**, provides peer mentoring, organizes cross-cultural activities to enhance the American learning experience for international students, and contributes to the globalization of the Purdue Northwest campus.

<http://www.pnw.edu/international/ipo/>

**Education Abroad and Exchange** develops and manages study abroad programs for PNW students including exchanges, internship, service-learning, and volunteer opportunities outside the U.S., as well as 'Study at PNW' semester and short-term programs for non-U.S. students. <http://www.pnw.edu/education-abroad/>

**The English Language Program (ELP)** provides degree-seeking students with essential language skills needed to succeed in their university studies and ESL/American culture classes for visiting international students. The program matches students with English speaking peer mentors for additional practice and interaction in and out of the classroom, and offers weekly cultural and educational excursions to local destinations. <http://www.pnw.edu/english-language-program/>



# Fees at Purdue University Northwest

## Fees for 2017-2018

Tuition and fees, set annually by the Purdue University Board of Trustees, are subject to change without notice. The fees listed below are for the 2017-2018 academic year.

### Tuition 2017-2018

Resident Undergraduate fee per credit hour	\$227.95
Nonresident Undergraduate fee per credit hour	\$546.20
Resident Graduate fee per credit hour	\$288.45
Nonresident Graduate fee per credit hour	\$636.35
Laboratory fee per lab hour	\$ 66.20
Registration for examination only	\$204.32
Registration for degree only	\$204.32
Undergraduate Composite fee per credit hour	\$ 24.75
Graduate Composite fee per credit hour	\$18.50

### Regular Fees

<b>Application Fee for Undergraduate Programs</b>	\$
This non-refundable fee is required.	25.00

<b>Application Fee for Graduate School</b>	\$
	60.00

<b>Transcript Evaluation Fee</b>	\$
	30.00

Fee is charged for evaluation of transfer credit. The fee is non-refundable and will not be credited to tuition and fees associated with course enrollment.

<b>Readmission Fee</b>	\$100.00
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Those students dropped by the university for academic reasons are assessed a fee before application for readmission will be processed.

<b>Replacement of Student Service Fee Card</b>	\$
	15.00

**Late Registration Fee:** For students who register after classes begin, an additional nonrefundable fee of \$8.50 per credit hour will be assessed.

**Breakage Fee:** Usually included in course fees for the cost of normal breakage and wear and tear on equipment. An additional charge will be levied against individuals for excessive waste, loss or breakage, to be paid before course credit will be given.

Purdue Northwest will assess a differential fee based on students' majors in Nursing, Business, Engineering, and Technology programs beginning with students admitted Fall 2016. The fee will be used to fund and support educational advancements for students in the specific major, including faculty; support and coordination of professional career development; monitoring experimental learning activities; and maintenance of labs and capstone courses.

If a student fails to fulfill any financial obligation to any university department, the student's records will be encumbered. Students will be notified of the outstanding obligation and will be given a specified time to settle the account.

An encumbered record means that the student may not be allowed to register for courses at any Purdue University Campus and the student's official transcript will not be released until the financial obligation is satisfied.

## Payment Responsibility/Payment Options

It is the student's responsibility to finalize payment options before the designated payment deadline date in order to prevent the cancellation of classes for the term enrolled. Students will save time and avoid lines by selecting a payment option before the designated payment deadline date.

Purdue University Northwest offers several convenient payment options to assist students to finance their educations.

Web Payment Plan (see section entitled [Purdue University Northwest Payment Plan](#) for detailed information)

- Access "Pay my Bill" through MyPNW to easily and conveniently pay your bill for any semester that you are registered at Purdue University Northwest.
- Accepted payment options online: Webcheck or Credit card (through Pay Path with a 2.75 % convenience fee). Access MyPNW via the Web at: [www.pnw.edu](http://www.pnw.edu)
- Mail Check to: Bursar's Office, 2200 169th Street, Hammond, IN 46323-209, or Bursar's Office, 1401 S US HWY 421, Westville, IN 46391
- Night Deposit Box (located at the north side of Lawshe Hall off of Woodmar Avenue at the Hammond location or on the left side of the main doors to the Bursar's Office, SWRZ 127, at the Westville location)
- In Person: Cash, or Check. Students may select payment options in person at the Bursar's Office located in the Enrollment Services Center, Lawshe Hall, Room 130 in Hammond or Schwarz Hall, Room 127 in Westville.

For questions or concerns regarding payment responsibility and/or help with payment options, please contact the Bursar's Office at 219-989-2560 or 219-785-5337 or view their website at: [www.pnw.edu/bursar](http://www.pnw.edu/bursar)

## **Purdue University Northwest Payment Plan - Fall 2017**

25% due at time of signing up, with 3 payments on the 5th of Sept, Oct & Nov. Must sign up by 4:00 PM on August 3rd. Payments will be automatically deducted from the form of payment they use for the down payment on the payment dates. 8% APR, no application fee.

## **Refunds**

Course fees, technology fees, and student services fees will be refunded for withdrawal from full term classes according to the following schedule:

- 100% Prior to the semester starting
- 100% During the first week of classes
- 60% During the second week of classes
- 40% During the third week of classes
- 20% During the fourth week of classes
- 0% After the fourth week of classes

The policy during the summer semester is as follows:

- 100% Prior to session starting
- 100% During the first week of classes
- 40% During the second week of classes
- 0% After the second week of classes

Students must complete the withdrawal procedure by submitting a signed add/drop card to the Office of the Registrar (Enrollment Services Center — Lawshe Hall Room 130 at Hammond or Schwarz Hall Room 40 at Westville), to be eligible for a refund. A detailed schedule of the refund policy may be obtained from the Office of the Registrar. NOTE: Students must follow the withdrawal procedure outlined above to be officially withdrawn from a course. Failure to do so could result in the student being charged and receiving a failing grade in the class. No refund will be given for courses dropped after the fourth week of the semester.

Students whose registration is cancelled by the Dean of Students for disciplinary reasons will receive refunds based on this same schedule. Refunds of deposits on equipment are subject to regular service and breakage charges.

## **Return of Financial Aid (Title IV) Funds**

For students who are the recipients of financial aid (Title IV) funds and withdraw from all of their classes prior to October 27th, 2017 for the Fall 2017 semester, or March 23rd, 2018 for the Spring 2017 semester, or withdraw prior to the completion of more than 60% of any term, the institution is required to determine the amount of unearned financial aid funds that must be returned to the Title IV program(s). Depending on the amount of financial aid disbursed to students or onto students' accounts, students may be liable for a portion of the amount of unearned financial aid that must be returned to the Title IV program(s). To fully withdraw from the university, students can initiate the withdrawal

process by telephone by contacting the Office of the Registrar Hammond location at (219) 989-2181 or by visiting the Enrollment Services Center located in Lawshe Hall, Room 130, or the Office of the Registrar, Westville location, in Schwarz Hall Room 40.

## **Classification of Students as Resident or Non-Resident**

The assessment of tuition and fees for a given semester is based on the student's residence classification on the first day of classes for that semester. Students who are not classified as residents of the State of Indiana are required to pay non-resident tuition. A student's residence classification continues in effect for subsequent semesters unless and until the classification is changed.

## **Responsibility for Residence Classification**

The Director of Admissions or a designee determines the initial residence classification of an undergraduate student at the point that the student is admitted or re-enters the university. The Director of Graduate Studies or a designee determines the initial residence classification of each Graduate student at the time the student enters or re-enters the university.

All reclassifications are determined by the Registrar or a designee. Any of these authorities are authorized to require certificates, affidavits, documents, or any other evidence they deem necessary. The burden of proof is always on the student making a claim to resident student status. In addition to the required proof, to be considered domiciled in Indiana, a person must reside continuously in the state for a predominant purpose other than attending an institution of higher education for at least 12 months immediately preceding the first day of classes of the term for which resident classification is sought. Students who have further questions about residency reclassification may request a brochure from the offices of any of these authorities.

## **Changes in Residence Classification for Tuition Purposes**

Either the student or the university may initiate an inquiry of residency classification. The non-resident student has the responsibility to apply to the Registrar for reclassification if the student believes that changes in the situation justify reclassification.

### **To apply for a change**

The student must apply in writing, using a form available from the Office of the Registrar, at any time after the requirements for domicile have been met, but no later than 15 days after the start of classes for the semester in which reclassification is sought. The Registrar will make a decision no later than 30 days after the completed application is filed.

## **Penalties for Failure to Provide Adequate Information**

A student who fails to notify the University of a change of facts or provides false information which might affect classification or reclassification from Resident to non-Resident status will be required to pay retroactively any tuition fees which would normally have been assessed.

In addition, a Student who provides false information or conceals information for the purpose of maintaining or achieving Resident classification may be subject to appropriate disciplinary action as well as other penalties that may be prescribed by the law.

## **Residence Classification Appeal**

A Student who is not satisfied with the determination concerning his or her residence classification may appeal the decision to the Residence Appeal Committee at the campus where he or she is enrolled. The appeal must be filed within 30 business days after the first day of classes of the academic session for which the determination is effective, or within 30 business days after the original decision has been reconsidered, whichever occurs later. Failure to file an appeal within this specified time limit will constitute a waiver of all claims for reconsideration for that academic session.

The appeal must be in writing and include reasons for the appeal and a complete statement of the facts upon which the appeal is based. The written appeal must be forwarded to the Chair of the Residence Appeal Committee. Consistent with the general intent and purpose of this policy, the Residence Appeal Committee may uphold or reverse the decision of the classifying official. The committee is authorized to classify a Student as a Resident, though not meeting the specific requirements herein set forth, if the Student's situation presents unusual circumstances and the classification is within the general scope of this policy. Persons otherwise responsible for determining residence classification of Students may assist the committee in a consultative capacity. The decision of the committee in all cases will be final.

## Financial Aid

The Office of Financial Aid works to assist prospective and current students with the application process and in finding sources of financial aid to pay for college. Purdue University Northwest (PNW) participates in Title IV federal, state and campus-based financial aid programs.

### Should I Apply for Financial Aid?

It is recommended that ALL Purdue University Northwest students apply for financial aid, regardless of whether or not you believe you would be eligible. To find out if you are eligible for financial aid - federal, state, institutional, or private – YOU MUST APPLY!

### Who is Eligible?

All students applying for financial aid must meet the following:

Be a U S citizen or eligible non-citizen

Have a valid Social Security Number

Have a high school diploma or a General Education Development (GED) certificate

Be enrolled or accepted for enrollment as a degree seeking student

Be enrolled at least half-time to be eligible for Direct Loan program funds

Maintain satisfactory academic progress

Register with Selective Service, if required

Complete and sign the Free Application for Federal Student Aid (FAFSA)

Other requirements may apply. For more information, please contact the Office of Financial Aid.

### Can I Estimate My Financial Aid?

You certainly can! An on-line Financial Aid Estimator is available to help students and families plan for educational costs at Purdue Northwest.

### The Application Process

Applying for student financial aid is an annual activity that may begin as early as October 1, prior to the academic year the student is attending (beginning 2017-18). The Free Application for Federal Student Aid (FAFSA) – or, for previous filers, a Renewal FAFSA – is the key to determining the type and amount of assistance a student can receive.

Students who submit the FAFSA by April 15th prior to the academic year they will be attending, will be considered for all available types of financial aid. Those filing after the April 15th priority date may be considered only for federal

financial aid programs. Students must complete the FAFSA; in addition, students and/or families may be required to submit other documentation as requested by the Office of Financial Aid. Some scholarships may require a separate application, information is available at: <http://admissions.pnw.edu/financial-aid/scholarships/>

## Types of Financial Aid

Financial aid may be classified as gift assistance or self-help aid. Gift assistance is aid that generally does not have to be repaid. Gift assistance aid includes:

Federal Pell Grants

Federal Supplemental Education Opportunity Grants (FSEOG)

Indiana Commission of Higher Education Awards including

Twenty-first Century Scholars, Frank O'Bannon grant, Adult Student grant and Children of Veteran and Public Safety Officer (CVO) benefits

Institutional and private scholarships

Self-help aid generally must be repaid or earned, it includes:

Federal Direct Stafford Loans (subsidized and unsubsidized)

Federal Direct Parent Loans for Undergraduate Students (PLUS)

Federal Direct Graduate PLUS loans for Graduate Students

Federal Work Study

Details on types of Financial Aid available at Purdue Northwest are available from the Office of Financial Aid and on the PNW Financial Aid website at: [www.pnw.edu/finaid](http://www.pnw.edu/finaid)

## Financial Aid Eligibility

When you complete the FAFSA, the information you report is used in a formula established by the federal government that calculates your Expected Family Contribution (EFC). The formula considers many factors including income, assets, taxes paid, family size and number of family members in college when determining the family's ability to contribute. If you feel you or your family have unusual circumstances or expenses that may affect your EFC, contact the Office of Financial Aid. Financial aid eligibility is based upon a determination of your financial need, which is the difference between the estimated cost of attendance and your Expected Family Contribution (EFC).

ESTIMATED COST OF ATTENDANCE minus EXPECTED FAMILY CONTRIBUTION (EFC) equals  
FINANCIAL NEED

Additional information on cost of attendance and financial aid budgets is available at:

<http://admissions.pnw.edu/financial-aid/cost-of-attendance/>

## Important Dates and Information

There are several important dates that can impact your financial aid. Visit the Important Dates and Deadlines webpage often to check on dates and deadlines, found at:

<http://admissions.pnw.edu/financial-aid/important-deadlines/>

## Important Notes

If you are a financial aid recipient and intend to fully withdraw from the university, you must initiate the withdrawal process by contacting the Office of the Registrar at

Hammond location – (219) 989-2210, or by visiting the Enrollment Services Center located in Lawshe Hall, Room 130

Westville location – (219) 785-5342, or by visiting Schwarz Hall, Room 40

Remember, it is your responsibility to verify your account status with the Office of Financial Aid and fulfill your payment obligation prior to the Final Payment Date or your classes may be cancelled.

If your Authorized Aid is less than your tuition and fee charges, you must pay the balance owed prior to the Final Payment Date or your classes may be cancelled

If your Authorized Aid is equal to or greater than your bill, your classes will be held, and you will need to contact the Office of the Registrar should you choose not to attend

Changes in enrollment may result in a revised financial aid award. You must notify the Office of Financial Aid should you change your enrollment, stop attending, or drop below a half-time status.

## Satisfactory Academic Progress Policy for Financial Aid Recipients

Purdue University Northwest will provide financial assistance to students whose academic progress meets certain criteria set forth by the University. To remain eligible for aid, students must make satisfactory progress toward a degree as outlined in the Satisfactory Academic Progress Policy, which is available upon request in the Financial Aid Office or on the Financial Aid website at: <http://admissions.pnw.edu/financial-aid/pnw-sap/>

Credit hours transferred from other institutions will be included in the number of semester credit hours earned when these hours are accepted in a specific degree area. Credit hours are counted regardless of Financial Aid status. Letter grades of E, F, I, W, and N do not count as earned credit hours for progress. Students who do not successfully meet satisfactory academic progress requirements will be denied federal and state aid (including grants, scholarships, loans, and work study employment). Financial Aid recipients will have their academic progress reviewed at the end of each semester. Students may appeal financial aid denial by following the procedures outlined in the Satisfactory Academic Progress Policy.

## How Do I Contact the Office of Financial Aid?

Hammond location – (219) 989-2301, or by visiting the Enrollment Services Center located in Lawshe Hall, Room 130, or by email at [finaid@pnw.edu](mailto:finaid@pnw.edu)

Westville location – (219) 785-5460, or by visiting Technology Building, Room 157, or by email at [finaid@pnw.edu](mailto:finaid@pnw.edu)



## Academic Regulations

Students who enter institutions of higher education agree to know and abide by the rules of their institutions. Listed in this section of the catalog are some of the specific regulations which govern student and academic programs. Other regulations are listed in the Student Handbook, which is available to students via the Web at <http://www.pnw.edu/dean-of-students/student-handbook/>. A complete set of academic regulations is available to students in the Office of the Dean of Students, SUL (Student Union and Library), Room 313 at Calumet location and, Library-Student Faculty Building Room 103 at the Westville location.

## Academic Advising, Program Requirements and Degree Maps

Students are expected to know the requirements for the degree(s) in which they are pursuing. In Spring 2017 students can view their program requirements on-line by using the EduNav application. Students access this tool in the PNW portal. Students can plan class schedules for future semesters, track progress toward a degree and consider other degree options.

Students are also expected to meet with their academic advisor every semester in order to ensure continued progress toward their program of study degree requirements. Program Requirements/Degree Maps for Fall 2017 can be reviewed at the website: <http://www.pnw.edu/catalog/degree-maps>

## Academic Calendar

The academic calendar shall consist of two, 16-week semesters and one summer session. Refer to our website at <http://www.pnw.edu/registration/> for exact dates on the registration calendar.

## Majors and Degree Programs

Students are assigned to an academic program and advisor based upon the major on their initial application and the admissions decision. Students opting to change their major may do so by completing a Change of Degree Objective form and receiving appropriate approvals. The Change of Degree Objective form is available online at: <http://www.pnw.edu/registration/change-of-degree-objective/>

## Registration

Pre-registration for future semesters is ongoing. Registration dates can be found on the University academic calendar. Registration may be done via the web (if cleared by the student's advisor) or in the office of the advisor. Drop and Adds may also be processed via the web. Payment may be made by web, mail, or in person. The deadline for payment of fees occurs before the first week of classes.

## Late Registration

The late registration period for the fall and spring semesters ends on Friday of the first week of classes. In the summer session, the late registration period ends on Wednesday of the first week of classes. Registrations during this period will be assessed late registration fees (see Fee section).

## Registration for Classes

There are three registration periods for the fall, spring, and summer sessions.

**PRIORITY REGISTRATION:** allows students an opportunity to pre-register in order to enroll in the courses they need.

**OPEN REGISTRATION:** for students unable to register early and for students who may need to adjust their schedules.

**LATE REGISTRATION:** held during the first week of classes (special schedule for summer) and to allow students to make section and class changes. A penalty fee is charged to students who enroll during this period.

## Adding Courses

Students may add courses during the first four weeks of the semester by submitting a completed add/drop card to the Office of the Registrar. The signatures of both the academic advisor and instructor of the class being added are required

during the second, third, and fourth weeks of the semester. Student Athletes must contact the Athletic Department in order to process changes to their semester schedule. Signatures are required for these changes.

Week 1	No approval required.
Week 2-4	Approval of academic advisor and instructor.
Week 5-9	Extenuating circumstances only. Approval of academic advisor, instructor and head of the department in which the course is listed.
Week 10-16	Not permitted.

## Dropping Courses

Students may withdraw from courses by submitting an add/drop card to the Office of the Registrar.

The time period in which a student withdraws from a course determines the recording of the course on the student's transcript. The following guidelines apply to the sixteen week Fall and Spring semesters only. Accelerated term and Summer term refund schedules are calculated based upon a modified schedule.

Week 1-2	No grade recorded on academic record
Week 3-12	W grade recorded on academic record
Week 13-16	No withdrawals are allowed*

\* Exceptions. Exceptions to the preceding regulations for registration, schedule revision, and cancellation of assignment may be made for courses that do not span the regular semester or summer session

## Class Attendance

Students are expected to be present for every meeting of the classes in which they are enrolled. All matters relative to attendance, including making up of work missed, are matters for arrangement between the student and instructor involved. It is expected that all instructors will, at the beginning of the semester, make a clear statement to all of their classes regarding their policy for handling absences. Students who fail to meet their class engagements satisfactorily may be denied credit for exercises missed. The instructor will be responsible for counseling with the student whose absences endanger academic performance.

A problem of excessive absences may be referred to the Dean of Students by either the instructor or the student if further information is needed or if either feels that further discussion would resolve the problem. Instructors obtaining information concerning the absence of a student due to personal factors are requested to report such knowledge at once to the Dean of Students. If a student is absent from all the meetings of any regularly scheduled class for a period of two successive weeks, the student may be reported to the Dean of Students for appropriate action.

Class attendance is mandatory for Title IV financial aid recipients.

## Course Withdrawal

In order to withdraw from any class, a student must complete a drop card approved by an advisor and submit it to the Registrar's Office. Students with loans making a change in enrollment may revise their financial aid award. The student should notify the Office of Financial Aid immediately if there is a change in enrollment.

## Discontinuance of class attendance is not the basis for withdrawal.

Students who do not notify the Registrar's Office when they plan to withdraw will be given a failing grade in each course involved.

## Allowable Academic Load

A student's academic load shall be arranged, so far as possible, in accordance with the following policy:

1. Credits in excess of 18 hours during a regular session should be carefully monitored by the academic advisor, who may wish to consult with appropriate University personnel concerning the student's prognosis for success. Unless the student's curriculum requirement for that session is specified as greater than 18 credits, approval by the dean of his/her school or the dean's designee must be obtained before the student may be assigned more than 18 credit hours.

2. In summer session, a student may not be assigned to more than nine credit hours without approval by the dean of his/her school or the dean's designee (University Senate Document 83-5, as amended and approved January 23, 1984).

## Transfer to Another Purdue Campus

Upon the completion of the semester or summer session, an undergraduate student may transfer enrollment from Purdue University Northwest to another Purdue University campus, provided all requirements are met. Program requirements vary. To initiate this process the student must complete the undergraduate application at the applicable campus you are applying to. Following this procedure an Authorization for Enrollment form from the intended campus of registration and instructions for registration will be sent to the student.

Students must be admitted to a degree program of Purdue University before they are eligible to transfer. Students must meet all deficiencies and be academically admissible to a desired program prior to seeking admission to another school.

## Grades

Each student shall be responsible for the completion of all required work, in each course for which he/she has enrolled, by the time of the last scheduled meeting of the class, unless his/her assignment to the course has been properly withdrawn. Each student shall receive from his/her instructors a grade in each course for which he/she is enrolled at the close of the session. This grade shall indicate the student's achievement with respect to the objectives of the course.

Grades offered at Purdue Northwest are listed below:

### For Credit Courses:

A+/A	Highest passing grade
A-	
B+	
B	
B-	
C+	
C	
C-	
D+	
D	
D-	Lowest passing grade, indicating achievement of the minimum objectives of the course
E	Conditional failure, meaning failure to achieve minimum objectives, but only to such limited extent that credit can be obtained by examination or otherwise without repeating the entire course. This grade represents failure in the course unless the record is changed within one semester, by examination or otherwise. In any case, the grade cannot be changed to any other grade but a D.
F	Failure to achieve minimum objectives of the course. The student must repeat the course and complete it satisfactorily in order to establish credit for it.

### For courses in the pass/not pass option:

P	Passing grade, equivalent to A, B, or C
N	Not passing

**For zero credit courses** (includes thesis research but not including laboratory portions of courses in which, for purposes of scheduling separate course designations are used for the laboratory section):

S	Satisfactory, meets course objectives
U	Unsatisfactory, does not meet course objectives
AU	Audit Grade; does not meet objectives

### For incomplete work, credit or noncredit:

I	Incomplete, no grade; a temporary record of work which was passing when interrupted by unavoidable absence or other causes beyond a student's control
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An instructor may require a recommendation from the Dean of Students or a designee that the circumstances warrant a grade of I. The student must achieve a permanent grade in the course no later than the twelfth week of the second semester subsequent to the enrollment. If not, the I will become IF. If the student is not enrolled for a period of three years following the semester in which the incomplete is given, the incomplete grade will be permanent. The grade will

not revert to a failing grade, nor will the student be able to earn credit for the course by completing the work. **THIS ACADEMIC REGULATION DOES NOT APPLY TO INCOMPLETES RECEIVED PRIOR TO SUMMER 1999.**

PI — Incomplete, no grade; same as I for student enrolled in pass/not pass option.

SI — Incomplete, no grade; same as I for student enrolled in zero-credit course.

#### **Other**

The Registrar records the following grades and symbols in special circumstances:

W	Withdrew; grade records that student was enrolled in a credit course and withdrew or cancelled the course after the third week (see Registration for summer schedule).
WF	Withdrew failing
WN	Withdrew not passing
IF	Assigned by the Registrar; failure to complete an I grade by the twelfth week of the second semester subsequent to enrollment in a credit course. Counted as an F in the scholarship index.
IN	Unremoved incomplete and failing; failing to complete a pass/not pass course in which the student received a PI by the twelfth week of the second semester subsequent to enrollment in the course. Does not affect scholarship index.
IU	Unremoved incomplete and failing; failing to complete a zero-credit course in which a student received an SI by the twelfth week of the second semester subsequent to enrollment in the course. Does not affect scholarship index.
IX	Assigned by the Registrar; student not enrolled three years after incomplete was given, then incomplete will be permanent. Does not affect scholarship index.
NS	Assigned by the Registrar; for those course grades not submitted by the instructor.

## **Pass/Not Pass Option**

In order to provide students with the opportunity to broaden their educational foundations with minimum concern for grades the university faculty has provided an alternative grading system in which a student may take a limited number of courses as Pass/No Pass. Each student who would have earned a Grade of A+, A, A-, B+, B, B-, C+, C or C- has passed the course and that any other such student has not passed. The specific regulations stipulating when this option may be used are determined by the school administering the curriculum of the student.

## **Auditing Classes (Visitors)**

A person who is already enrolled as a student in the University and who wishes to attend a course in the University without credit shall obtain from the Office of the Registrar an Audit Permission form stating his/her name, their PUID, the subject, course number, and CRN (Course Reference Number), the number of credits and the term. The form needs to be signed by the instructor of record for the course. A person who is not already enrolled as a student must apply for admission as a non-degree student with the Office of Admissions. Once accepted, he/she may follow the steps outlined above. No person who is ineligible for readmission by reason of that person having been dropped from the University for scholastic or other reasons shall be eligible to attend classes as a auditor.

A person who has status in the University by reason of admission to, and registration in, a definite classification may enroll in a course as an auditor. The assignment and enrollment must be completed by the regular procedure for registration. The assessment of fees and determination of allowable load shall be in accordance with the credit value or equivalent of the course(s) involved. Students whose names are placed on the Dean's list should be entitled during the semester following the designation of distinction with the instructors permission, may audit one class without assessment or additional fee.

An auditor in a course shall be entitled to hear lectures, recitations, and oral quizzes. He/Sshe shall not participate in classroom exercises except as invited by the instructor. He/She shall not submit papers, when tests or examinations are given, nor take part in laboratory work. An auditor shall receive no credit for the course.

## **Good Standing**

For purposes of reports and communications to other institutions and agencies and in the absence of any further qualification of the term, a student shall be considered in good standing unless he or she has been dismissed, suspended, or dropped from the University and has not been readmitted.

## **Scholastic Indexes**

The scholastic standing of all undergraduate students enrolled in programs leading to a degree shall be determined by two scholastic grade point averages (GPAs). The semester GPA and the cumulative (overall) GPA.

1. The semester GPA is an average determined by weighting each grade received during a given semester by the number of semester hours of credit in the course.
2. The cumulative GPA for an undergraduate student is a weighted average of all grades received by a student while enrolled in the curriculum plus all other grades received in courses taken in other curricula offered by the University and properly accepted for satisfying the requirements of the curriculum of the school in which the student is enrolled. With the consent of the appropriate academic advisor, a student may repeat a course. In the case of courses which have been repeated, or in which conditional grades have been removed by examination, or for which a substantially equivalent course has been substituted, the most recent grade received shall be used.

\*An equivalent course may be used when authorized by the faculty member in charge of said course.

Transfer credits from other colleges and universities may be used to fulfill degree requirements, but cannot be used to remove Purdue recorded grades from GPA calculations

For the purpose of averaging, each grade shall be weighted in the following manner:

A+, A	4.0 x semester hours = index points
A-	3.7 x semester hours = index points
B+	3.3 x semester hours = index points
B	3.0 x semester hours = index points
B-	2.7 x semester hours = index points
C+	2.3 x semester hours = index points
C	2.0 x semester hours = index points
C-	1.7 x semester hours = index points
D+	1.3 x semester hours = index points
D	1.0 x semester hours = index points
D-	0.7 x semester hours = index points
E,F, IF	0.0 x semester hours = index points

Grades of P, N, I, PI, W, WF, WN, IN, IU, AU, and NS are not included

## Scholastic Deficiency

### Academic Probation and Deficiency - 2.0 Good to Go

#### A. Academic Probation

A student at Purdue University shall be placed on academic probation if his/ her fall or spring semester or cumulative GPA at the end of any fall or spring semester is less than a 2.0

A student on academic probation shall be removed from that standing at the end of the first subsequent fall or spring semester in which he/she achieves semester and cumulative GPAs equal to or greater than 2.0.

Any grade change due to a reporting error will result in a recalculation of the GPA and determination of probation standing.

Academic standing will not be assessed in summer sessions.

#### B. Dropping of Students for Academic Deficiency

A student on academic probation shall be dropped from the University at the close of any fall or spring semester in which his/her semester and cumulative GPA is less than a 2.0.

Any grade change due to a reporting error will result in a recalculation of the index and determination of drop status.

## Readmission Procedure for Students Who are Academically Dropped for Scholastic Deficiency

According to University Regulations, when a student who is academically dropped from the University for the first time is not eligible to enroll for at least one fall or spring semester. A student who is academically dropped for the second time is not eligible to enroll for at least one calendar year. After completing the required sit out period, a student may petition for readmission to the Purdue campus he or she wishes to attend.

Purdue students requesting readmission must complete an online readmission application through our website <http://www.pnw.edu/admissions/> and pay a \$100 non-refundable fee. The fee must be paid by the designated deadline in order for the application to be processed. For inquiries regarding the readmission process, please call the Office of Undergraduate Admissions at (219) 989-2213 or toll free at (855) 608-4600.

## Graduation Requirements

### For the Associate Degree

1. **Completion of Program Requirements.** Completion of the plan of study for the degree, either by resident course work, examination, or credit accepted from another institution, of the plan of study underlying the degree.
  - **Ten Year Rule.** Deans of the college which administers the student's major can refuse to accept for graduation credit any course completed 10 or more years ago. Reentering students will be notified immediately of all such decisions upon reentering.
  - **Substitution of Courses.** Deans of the college which administers the student's degree may authorize substitutions for courses for graduation.
2. **Residency Rule.** Resident study at Purdue University Northwest for at least two semesters and the enrollment in and completion of at least 32 credit hours required and approved for the completion of the degree at Purdue University Northwest campuses. Students normally are expected to complete the entire second year in residence, however, with the approval of the dean of the college concerned, a student who has had at least three semesters of resident study may complete not to exceed 16 semester hours of the second year in another approved college or university. For the purpose of this rule, two summer sessions may be considered as equivalent to one semester.
3. **Registration,** either in residence or in absentia, as a candidate for the desired degree during the semester (or summer session) immediately preceding the completion of the degree
4. **A minimum cumulative GPA of 2.00 shall be required for graduation.** A student who has completed all other requirements for an associate degree, but has failed to meet the quality requirements may register for additional courses with the approval of an authorized representative of the dean of his/her school after a review of his/her record. The additional courses that the student may take after meeting all quantity requirements shall not exceed 10 credit hours. Credit in these additional courses must be established within three years of the date on which all degree requirements except the minimum cumulative GPA were met. The student will be considered as having met the quality requirements for graduation if his/her graduation index including the above extra courses, meet the quality standard in effect at the time when all other graduations requirements were satisfied.
5. **Assessment** The University expects its students to complete all assessment procedures related to General Education and/or major field as required.

### For the Bachelor's Degree

1. **Completion of Program Requirements.** The completion of the plan of study for the degree, either by resident course work, examination, or credit accepted from another institution, of the plan of study underlying degree.
  - Ten Year Rule.** Deans of the college which administers the student's major can refuse to accept for graduation credit any course completed 10 or more years ago. Re-entering students will be notified immediately of all such decisions upon reentering.
  - Substitution of Courses.** Deans of the college which administers the student's degree may authorize substitutions for courses for graduation.
2. **Experiential Learning.** Experiential learning is a graduation requirement for students who started with Purdue University Calumet Fall 2008. This approach to teaching allows students to go beyond theory based learning and explore ways to gain practical knowledge within their program of study. Students will enroll in two experiential learning courses while completing their degree. Experiential learning is offered through undergraduate research, internships, service learning, cooperative education, cultural immersion/study abroad, design project or practicum. Your academic advisor will assist you in selecting an experience that is right for you.

EXCEPTION: Transfer students with no more than two semesters of enrollment remaining and no more than 32 credit

hours needed for degree completion are exempt from the experiential learning requirement (At the discretion of the Dean or Department Head)

3. **Residency Rule.** Resident study at Purdue University Northwest for at least two semesters and the enrollment in and completion of at least 32 credit hours required and approved for the completion of the degree on Purdue University Northwest campuses. These courses are expected to be at least junior-level courses. Students must earn a minimum of 50 percent of coursework in their major concentration area in resident study with resident credit as defined above. A college/school/department/program may require more than 50 percent of resident credit to fulfill a major concentration for a given program. Students normally are expected to complete the senior year in residence; however, with the approval of the dean of the college concerned, a student who has had four semesters of resident study may complete the last year or a portion of it at another college or university, provided that the number of semester hours of credit to be taken does not exceed 25 percent of the total hours required for the degree. The foregoing stipulations do not apply to students who earn credit elsewhere through a contract or arrangement entered into by the University or one of its academic units.

4. **Registration,** either in residence or in absentia, as a candidate for the desired degree during the semester (or summer session) immediately preceding the completion of the degree

5. **A minimum cumulative GPA of 2.00 shall be required for graduation.** A student who has completed all other requirements for a bachelor's degree, but has failed to meet the quality requirements may register for additional courses with the approval of an authorized representative of the dean of his/her school after a review of his/her record. The additional courses that the student may take after meeting all quantity requirements shall not exceed 20 credit hours. Such a student may take in another approved college or university not more than 9 of the 20 credit hours permitted, provided such courses are approved in advance in writing by an authorized representative of the dean of his/her school.

Copies of approvals must be filed in the Office of the Registrar. Credit in these additional courses must be established within five years of the date on which all degree requirements except the minimum cumulative GPA were met. The student will be considered as having met the quality requirements for graduation if his/her cumulative GPA, including the above extra courses, meets the quality standards in effect at the time when all other graduation requirements were satisfied.

6. **Assessment:** The University expects its students to complete all assessment procedures related to General Education and/or major field as required.

## Academic Honors

### Dean's List

The Dean's List is Purdue University Northwest's way of recognizing undergraduate students for outstanding scholastic achievement. At the conclusion of each semester, the registrar shall indicate which undergraduate students are scholastically eligible to be included on the Dean's List. To be cited on the Dean's List for any semester, one must:

- have at least 12 hours included in the cumulative GPA
- have at least 6 hours included in the semester GPA
- attain at least a 3.5 cumulative GPA
- have at least a 3.0 current semester GPA

### Semester Honors

Semester Honors recognize undergraduate students who:

- have at least six credit hours included in the semester GPA
- attain at least a 3.5 semester GPA
- have at least a 2.0 overall GPA

Students whose names are placed on the Dean's List shall be entitled to the following special privileges during the semester following the designation of distinction:

- may be assigned to more than 18 credit hours upon request
- with the instructors permission, a full-time Dean's List student may audit one class without assessment or additional fee

It would be possible to earn both Dean's List and Semester Honors standing if the student has a really outstanding semester.

Pass/no-pass grades and credits do not count in hours totals for either category of honors.

## **Degrees Awarded**

### **Graduation with Distinction**

- A candidate for the baccalaureate degree with distinction must have a minimum of 65 hours of credit earned at Purdue University included in the computation of the overall GPA. A candidate for an associate degree with distinction must have a minimum of 35 hours of credit earned at Purdue University included in the computation of the overall GPA.
- The minimum graduation index for graduation with distinction in each college shall be no less than the 90th percentile of the graduation indexes of the graduates in each college, for the spring semester, provided that the index is at least 3.30. The minimum overall GPA so determined in the spring for each college shall be applied for graduation with distinction for the subsequent summer session and fall semester. In administering this rule, all baccalaureate engineering graduates will be considered as one school.
- Of those graduates who qualify for distinction under these rules for the spring semester, the three-tenths of the baccalaureate graduates having the highest overall GPA shall be designated as graduating with highest distinction, irrespective of the colleges from which they graduate. The three-tenths of the spring associate degree graduates having the highest graduation indexes will be designated as graduating with highest distinction. The minimum overall GPA so determined for graduation with highest distinction shall be applied for graduation with highest distinction for the subsequent summer session and fall semester.

### **Commencement Schedule**

Purdue University Northwest conducts commencement ceremonies twice each year. The May commencement ceremony is for students who have completed all graduation requirements by the end of the Spring semester. The December commencement ceremony is for students who have completed all graduation requirements by the end of the Summer session and for students who will meet their requirements at the end of the Fall semester. For more information about the commencement schedule, please contact the Office of the Registrar at 219-989-2210.

### **Graduate on Time...**

#### **Degree Maps and Free Course Guarantee**

Purdue University Northwest provides 8 semester plans of study for every bachelor degree program. A plan of study (or degree map) is a recommended sequence of classes designed to show how a program can be completed within four years.

Visit 15 to Finish Indiana for information and resources regarding how to complete a Bachelor's degree in four years:  
<http://www.learnmoreindiana.org/college/succeeding-in-college/graduating-on-time/>



## The Graduate School

The Graduate School (Graduate Studies Office) oversees all aspects of graduate education at Purdue University Northwest. This includes admissions and records, new courses, graduate staff employment, and program development. As a unit of the system-wide Graduate School, Purdue University Northwest Graduate School coordinates all activities with Purdue University Graduate School.

Click here for the policies and procedures of the Purdue Graduate School.

## Office of Graduate Studies

Office of Graduate Studies, Hammond location, Lawshe Hall Room 242, (219) 989-2257

*Mailing Address:*

Purdue University Northwest

ATTN: Graduate Studies

2200 169th Street

Hammond, IN 46323

Director of Graduate Studies, Hammond location, Lawshe Hall, Room 242A, (219) 989-2545.

Email: [grad@pnw.edu](mailto:grad@pnw.edu)

Seventeen academic departments and colleges of Purdue University Northwest's Hammond location offer the Doctor of Nursing Practice and sixteen master's degree programs to meet the post-baccalaureate education needs of the citizens of northwest and north central Indiana and surrounding areas. Graduate Certificates and non-degree graduate study are also available. Selected programs and options are also offered online.

In addition, the Westville location of Purdue University Northwest offers the Master of Business Administration (MBA) degree program, non-degree graduate study, and a graduate certificate in Economic Development.

The graduate programs are flexible, to suit the needs of returning students and their employers as well as the needs of traditional graduate students. The programs can also provide development for industry, business and government professionals through focused courses and degrees designed for a wide variety of student ages, schedules, and career paths, including those leading to doctoral study.

Students and applicants at the Westville location of PNW may submit documents to the Graduate Studies Office at the Hammond location address above. Documents may also be sent via campus mail from the Westville location to the Graduate Studies Office in Lawshe 242 on the Hammond location; may be dropped off with the Office of Undergraduate Admissions at the Westville location (TECH 157) [please identify as graduate]; or may be submitted to the Grad chair for the MBA program in the College of Business on the Westville location.

Students interested in graduate study at either campus should refer to the individual departmental listings of degree requirements elsewhere in this catalog. Correspondence about admission to the Graduate School and inquiries about a specific college or department requirements should be addressed to the head of the college or department to which the applicant seeks admission.

## Admission to the Graduate School

### Degree-Seeking Applicants

Applicants for specific graduate degrees must apply for graduate study through the online application located at <https://gradapply.purdue.edu/apply/>

All applications are first evaluated by a departmental committee at Purdue Northwest. If recommended for admission, the application is submitted to the Office of Graduate Studies for final review and approval. An applicant is not officially admitted until notification from the Graduate School is received.

**General Admission Requirements:** Individual program's admission requirements may vary. Please check your specific program for specific requirements.

1. A four-year bachelor's degree from a regionally-accredited college or university application.
2. Graduation index of 3.0 (B) on a 4.0-point scale (individual departments and colleges may set higher indices). Conditional Admission may be available for applicants with undergraduate GPAs which are somewhat below but near 3.0. Please check with your program of interest for conditional admission requirements.

3. Other requirements, as detailed by individual departments and colleges: typically, a goal statement or statement of purpose, and/or a copy of any relevant professional license, a resume, or other documents as required by the application.
4. Test scores or other demonstration of Academic ability for graduate work.

**Applicants generally must submit:**

1. A completed online application.
2. Three letters of recommendation, or as directed by the department or program. Recommenders' names may be submitted online in the application and the recommendations may be completed in the online system. Hard copy letters of recommendation may also be accepted. Letters of recommendation should be submitted to the program of interest.
3. For admission purposes, copies of the official transcripts of all previous college and university course work completed may be uploaded into the online application. (Some programs require official copies: please check your department of interest for requirements). Electronic transcripts should be submitted to the PNW Graduate Studies Office at [grad@pnw.edu](mailto:grad@pnw.edu). If admitted, the applicant will be required to submit official copies of all transcripts during the first session of enrollment.
4. A \$60.00 application fee, payable online by credit card (\$75.00 for international students) — details are available in online application.
5. Other documents as required by the individual department or college (statement of purpose, etc.).
6. Other evidence of academic performance as required by the individual department or college.
7. Graduate Record Examination (GRE), if required by the particular department or college Consult the individual department or college for additional information.
8. The Graduate Management Admission Test (GMAT) may be required by the College of Business Consult the College of Business for additional information.
9. Further information can be found at the PNW Graduate School's Web site at: <http://academics.pnw.edu/grad-school/>.

## When to apply

Applications, transcripts, and supporting materials should be submitted to the department or college preferably four months, but not less than one month, before the beginning of the session for which the applicant seeks admission. Some programs have specific deadlines for application. Please check with the department in which admission is sought for information on the specific deadline. Domestic Applicants who are applying outside this guideline should check with the department or program for the possibility of later admission.

International students should check with the International Students Services office for application deadlines.

General Deadlines for International applicants who do not currently hold an F1 visa:

March 1st for Summer Admission

May 15th for Fall Admission

October 1st for Spring Admission

## Non-Degree Graduate Status

(Temporary Admission Status)

Students who wish to pursue study beyond the bachelor's degree, but who may not have a specific degree objective, may take graduate courses by submitting a non-degree application in the online system. In order to be considered for non-degree admission, the applicant should submit:

1. A completed non-degree online application located at <https://gradapply.purdue.edu/apply/>. There is no fee for a non-degree application. Applicants may choose non-degree study in a particular program, or choose Graduate Continuing Studies.
2. Evidence of completion of a four-year bachelor's degree, such as a copy of the bachelor's degree final transcript showing the date of degree completion. This copy should be uploaded into the online application for non-degree admission.
3. Note: Non-degree students are not eligible for financial aid or Graduate staff Positions. Graduate credits earned while in non-degree undergraduate status are not eligible for inclusion in a graduate plan of study, even if earned after completion of the baccalaureate degree.

## Certificate Admissions

Students who wish to pursue a graduate certificate must submit a separate online application for the certificate program. An application fee is required for admission to a certificate program. Please check the individual certificates for requirements, typically the certificate application requires an upload of a copy of an official transcript of undergraduate academic work. The application for certificate study can be found at <https://gradapply.purdue.edu/apply/>

## Twelve Credit Rule

No more than 12 hours of graduate credit earned as a non-degree-seeking student may be applied to a graduate degree plan of study. If an applicant for a regular degree program is approved during the semester in which the student is enrolled for the twelfth credit hour as a non-degree student, all credits completed prior to and during that semester are eligible for inclusion in the plan of study. However, the courses must be appropriate for the degree and be acceptable to the department or college. Students who fail to gain admission as degree-seeking students in a timely fashion may lose credit already earned.

## Grades Earned While In Non-Degree Graduate Status

No course in which a student receives less than a B- may be included in a plan of study if the student completed the course while in non-degree status. Please see the Graduate Policies and Procedures Manual and Academic Catalog for requirements for undergraduate excess and transfer credits at the graduate level.

<http://catalog.purdue.edu/content.php?catoid=8&navoid=8285>

## Graduate Credits Earned While In Non-Degree Undergraduate Status

Graduate credits earned while in non-degree undergraduate status are not eligible for inclusion in a graduate plan of study, even if earned after completion of the baccalaureate degree.

## Teaching License Registrants

Bachelor's degree holders seeking graduate credit without a degree objective, such as those working in teaching licensure programs or seeking to enhance professional qualifications in their occupations, may be admitted in non-degree graduate status. For further information about licensure, please see the School of Education and Counseling's web site at:

<http://academics.pnw.edu/education/programs/student-resources/license-information/>

## Academic Regulations

**GRADES.** Success in graduate study requires academic performance of a high quality. Only grades of "A," "B," or "C" — while maintaining a "B" average (3.0) — fulfill Graduate School requirements. A graduate advisory committee or a department or college may require grades higher than C- in certain courses or in all courses on the plan of study. Pass-fail or satisfactory/unsatisfactory grades are not acceptable for inclusion on the plan of study, although those courses may be a requirement for the degree. Some graduate programs do not accept a grade of C in any course on the graduate plan of study. Please see your academic program for specific requirements on grades for courses.

## Progress Toward Degree

Student progress is reviewed each semester by the individual college or department. If the student fails to perform satisfactorily, in the judgment of the department or college, the student may be asked to discontinue graduate study at Purdue University Northwest.

## English Requirement

Candidates whose native language is not English must prove proficiency in the English language by achieving one of the following:

- a. A TOEFL (test of English as a foreign language) score of 77 (including score minimums of Writing 18, Speaking 18, Listening 14, Reading 19). Note that in addition to required minimum scores for each category, the Graduate School also requires a minimum overall score that is higher than the minimums for the four area tests combined. Applicants must meet or exceed each of the five scores for admission to the Graduate School. For further information, go to <http://www.toefl.org>

Purdue University Northwest's campus code for TOEFL, GMAT, and other tests through Educational Service is 001638.

- b. The Graduate School also accepts International English Language Testing System (IELTS) Scores with an overall band score of 6.5 or more. For more information, go to <http://www.ielts.org>. The Graduate School also accepts the Pearson Test of English (PTE) with a minimum score of 58. An additional English proficiency option may be available to those enrolled in the English Language Proficiency Program at Purdue University Northwest. Please check with the Graduate Studies Office for more information.

**FOREIGN LANGUAGE REQUIREMENT.** There is no general foreign language requirement, though some colleges and departments do require a reading knowledge of a foreign language as a relevant research tool.

## Registration

Students are strongly encouraged to register during the early registration period for the best range of course selections.

**REGISTRATION FOR RESEARCH CREDIT.** Graduate students who use university facilities or are supervised by a faculty member must register for research hours. Registration for research hours should reflect the nature and amount of the student's research activities accurately. Research includes literature reviews and thesis writing.

**Registration in the student's last semester.** A candidate for any advanced degree must be registered during the last semester or session before receiving the degree. Students in the last semester of a master's program with a thesis option must be registered for a minimum of three hours of research credit. Students who have completed the required course work and are not otherwise registered in graduate coursework must be registered in a candidate course section (CAND) in order to graduate. A flat fee is charged for registration in candidate courses (CAND).

## Undergraduate and Transfer Credit

Course credits earned while an undergraduate at Purdue University or other accredited institution of higher learning may be applied toward an advanced degree if these credits are in excess of any requirements for the baccalaureate degree. Such credits must be certified as available for graduate credit by the institution from which the student received the baccalaureate degree, but will be accepted only if: (1) the student had senior standing and a 3.0 graduation index when taking the course, (2) the student received a grade of B- or better, (3) the course was designated as a graduate course, and (4) the course was taken at the graduate level.

Transfer of graduate credits earned at another institution is subject to the approval of the student's graduate committee and the chair of the graduate program. Transfer graduate credits must not have been used to support the award of a graduate degree at another institution. Transferred graduate credits may only be used if the student has earned a grade of B- or better.

## Advisory Committees

Each candidate for the master's degree with a capstone or thesis will have an appointed graduate committee consisting of at least three faculty members. This committee assists the student in preparing the plan of study and advises the student during graduate work. In the case of the thesis option, the committee also advises the student about research and writing the thesis. With the approval of the departmental Director of Graduate Studies, College Dean for Graduate Studies, or Grad program Chair, the student will select a major professor, who must agree to the appointment. The major professor chairs the advisory committee and oversees the student's research. The major professor and student must agree upon the related areas in the plan of study.

Candidates for coursework-only master's degree programs may have a single faculty advisor (major professor) within the program.

## Plan of Study

The plan of study includes specific courses which the student is expected to complete and all other requirements for the graduate degree; the student and the advisory committee for the department develop the plan of study together. The student is responsible for completing and submitting the plan of study to the Graduate School one semester prior to the semester in which he or she plans to graduate. The plan of study must be approved by the student's academic advisor before submission. In order to graduate, the plan of study must be submitted not later than the last business day before the start of classes for the session of expected graduation. If it becomes necessary to revise the plan of study, a Request for Change to the Plan of Study must be submitted with a justification. Plans of study are submitted electronically

through the ePOS system. The electronic plan of study is available to graduate students through the myPNW portal (Electronic Plan of Study Generator).

## Admission to Candidacy

Admission to candidacy for the graduate degree is granted only after approval of the formal plan of study. A candidate for any advanced degree must be registered during the semester in which the degree is awarded. (See requirements above).

## Oral and Written Examinations

The requirements for oral and written examinations are established by the advisory committee or the college or department. A final examining committee for each candidate certifies to the Graduate School that the student has met the requirements of the major department or college.

## Graduation Deadlines

Graduating on time is very important to most students. Therefore, a student must be aware of the rules and the deadlines set forth by the university and the academic department. Many rules and deadlines that apply to our Graduate School can be found on the Purdue West Lafayette website at: <https://www.purdue.edu/gradschool/about/calendar/> and related pages, as well as on the PNW Graduate Studies Office pages, including <https://academics.pnw.edu/grad-school/calendar-of-events/>

For more information about graduate study at either campus of Purdue University Northwest, visit the Office of the Graduate School's website at <http://academics.pnw.edu/grad-school/> or call (219) 989-2257. Email: [grad@pnw.edu](mailto:grad@pnw.edu)

## Academic Center for Excellence (ACE)

The Academic Center for Excellence (ACE) leads several important university initiatives that have a role in student retention and success: Academic Advising, Academic Recovery Program, Supplemental Instruction (SI), Tutoring, Series of Success Workshops, as well the GNS 29000 course.

### Academic Advising

The Academic Center for Excellence (ACE) is devoted to helping students discover their academic and career goals through academic advising and student academic support. Students within our department enter into a Career Pathway which is based on common discipline expectations consistent with the student's expressed goals.

We do this by advising students who fall into one of two categories:

- Undeclared Students: Students in this category have not met the prerequisite requirements for acceptance into their major of choice.
- Undecided Students: Students in this category are exploring career options.

Once accepted into an academic major, departmental academic advisors guide students through the curriculum for that major. Students are encouraged to develop direct advising relationships with their academic advisor. Ongoing interactions with academic advisors prior to registration periods and throughout the academic year are key to students' success at Purdue University Northwest.

### Academic Recovery Program

The Academic Recovery Program is designed to encourage both persistence and retention by providing intervention services for students who are at risk of academic dismissal, and are on probation due to their cumulative GPA. Purdue University Northwest developed this program based on research and successful programs at other universities. Interventions include enrolling in GNS 29000, a study skills course that addresses academic issues to encourage student success, working with an academic advisor to select appropriate courses for the upcoming semester, and developing strategies to assist students in making progress toward their degree objectives.

### Career Pathways

New ACE freshmen are accepted into a Career Pathway which is based on common discipline expectations consistent with the student's expressed goals. The University's current Career Pathways include: Business, Education, Exploratory, Health, and STEM. For each pathway, a predetermined two-semester plan of courses and activities is specifically aimed at exploring their area of career interest. Taking part in a Career Pathway will provide students the opportunity to develop personal connections with faculty and other students, take courses that research has shown are vital to student success, and broaden their learning experience. The two-semester plan is designed to give first-semester students the foundation they need to be successful at Purdue University Northwest.

### Student Academic Support (SAS)

Student Academic Support (SAS) provides free academic assistance to all Purdue University Northwest students in a friendly and nurturing environment. Our goal is to help students not only increase understanding but improve study skills and build confidence. Highly qualified, faculty recommended students are hired as tutors and S.I. Leaders. Employment opportunities are available. For additional information, call or visit our website (see above). SAS support services include Supplemental Instruction, Tutoring Services and Series of Success Workshops. Hammond: Gyte Building, room 102; Westville: Library-Student-Faculty (LSF) Building, room 202 Phone: 219/989-3227; Website: [www.pnw.edu/sas](http://www.pnw.edu/sas); Email: [sas@pnw.edu](mailto:sas@pnw.edu)

### Tutoring

Open Lab Tutoring is available free of charge in math, science and other major subject areas. The tutoring is conducted by peers on a drop-in basis - no appointments are needed. Schedules are available online and by visiting the office of Student Academic Support on your campus.

### Supplemental Instruction

Supplemental Instruction (SI) is a free academic support program that targets historically difficult courses. It is a non-remedial approach to learning enrichment that increases student performance and retention. SI offers regularly

scheduled, out-of-class review sessions to all students enrolled in a targeted course. SI sessions are facilitated by SI Leaders, students who have successfully completed the course and now sit in on every class with you. These sessions are interactive and give students the opportunity to review notes, discuss readings, practice problem solving and prepare for examinations.

## Series of Success Workshops

Aimed at assisting students with different aspects of attending a university, these one-hour workshops are FREE for all Purdue University Northwest students and are held on both the Hammond campus and the Westville campus. Below are the titles of some of the previous workshops that have been held:

- Am I in the Right Major?
- Face-to-Face: The Importance of Meeting with your Professors
- Finish in Four: The Graduation Recipe
- Midterm Madness: Survive Your Midterm
- Power in Numbers: The Importance of Forming Study Groups
- Save Your Semester: Pass that Class
- Test Smart: Successful Strategies for Exams
- Time Flies When You're on FACEBOOK: Time Management Skills
- The "Write" Stuff

## Staff

Linda Atkinson (2013) Academic Center for Excellence Senior Retention Advisor, B.S. University of Wisconsin – Stout, 2007, M.S., Indiana State University, 2009.

Deborah Beal (2011) Academic Center for Excellence Manager of Student Academic Support, B.A., Rutgers University, 1986, M.B.A., Rutgers University, 1993.

Jen Madgiak (2014) Associate Athletic Director for Academic Services and Senior Woman Administrator, B.A. Western Illinois University, 2008, M.S., Illinois State University 2011.

Christina Nevill (2013) Academic Center for Excellence Academic Advisor, B.S. Purdue University Northwest, 2011, M.S., Benedictine University, 2013.

Tara Sullivan (2016) Executive Director of Student Success and Transition, Ph.D. and M.A., University of Michigan, B.S., Indiana University.

Charnell Thomas (2014) Academic Center for Excellence Retention Advisor, B.S. Illinois State University, 1998, M.S.Ed., Northern Illinois University, 2006.

Michael Wilk (2014) Academic Center for Excellence Student Academic Support Coordinator, A.A. South Suburban College, 2000.

Oshunda Williams (2014) Academic Center for Excellence Retention Advisor, B.A. Wayne State University, 1998, M.A. Governors State University, 2004.

Alicia Zaleski (2015) Academic Center for Excellence Secretary V, B.S. Indiana University – Bloomington, 1989.

## Resources and Services

### Purdue Northwest Alumni Community

As Alumni of Purdue University Northwest-including its two founding institutions, Purdue University Calumet and Purdue University North Central, we are now bigger and better with 60,000+ alumni and 2 campuses, which makes us one unparalleled University. Purdue Northwest Alumni Community continue to bring honor to our great university with their many accomplishments and professional work. We are here to provide programs and services to keep you engaged with the university and with each other. We serve as a worldwide network that supports, enriches, cultivates, and celebrates experiences that last a lifetime!

To contact Purdue Northwest Alumni Community call us at 219-989-2308, email us at [alumni@pnw.edu](mailto:alumni@pnw.edu), visit our website at [alumni.pnw.edu](http://alumni.pnw.edu) for news, events and to update your information, or visit us at the Hammond campus in Lawshe Hall, room 322 or the Westville Campus in the Dworkin Student Services & Activities Complex in D-1114L.

### The Career Center

Location: Student Union Library Building (SUL), Room 349, Hammond  
Library Student Faculty Building (LSF), Room 104, Westville

Hours: Monday through Friday 8 a.m. to 4:30 p.m.

The Career Center assists students and alumni of Purdue University, regardless of their campus affiliation. As a bridge from college life to the world of work, it is our mission to facilitate connections between employers and students that lead to successful outcomes and satisfying futures. Services Offered include:

### Drop-In Career Advising-Typically 15 minutes or less

(No Appointment Needed)

- Resume, CV, Cover Letter Review
- Internship & Job Search Strategies
- Access to Purdue Northwest Handshake
- On Campus Student Employment

#### *Times*

Monday through Thursday 1 p.m. to 4 p.m.

Friday 9 a.m. to 11 a.m.

### Career Advising-By Appointment Only

- Mock Interview Preparation
- Job Search Strategies
- Graduate School Interview Preparation
- Creating a LinkedIn Profile
- Developing a Personal Statement
- Adapting Resumes to CV's

### Career Counseling-By Appointment Only

- Choosing Your Major
- Developing a Career Plan
- Job Search Strategies
- Considering & Exploring Graduate Schools or Advanced Degrees

*Handshake at Purdue University Northwest* is a modern career development platform that provides students and alumni with advanced online tools, available on all devices, including mobile technology. This system provides:

- Relevant feed of job and internship opportunities
- News feeds containing the latest information from the Career Center and your favorite employers
- Resources that specifically match your interests
- Appointment scheduling with select Career Center staff.



Access to Handshake is available to actively enrolled, degree seeking students and alumni of Purdue. You can create your Handshake account by logging onto [www.hirePNWpride.com](http://www.hirePNWpride.com).

## PNW Child Care

Purdue Northwest offers affordable childcare for the children of students, faculty, and staff.

Westville: **Lion Cubs Child Care Center**, 219-785-5242. Daycare for children ages 3-7, after school care for children K-5th grade. <http://www.pnw.edu/dean-of-students/north-central-campus/child-care/>

**Lion Cubs Child Care Center**, located on the Purdue Northwest Westville Campus in Room 135 of the Library-Student-Faculty Building, provides care for children of Purdue University Northwest students, staff and faculty during the Fall and Spring semesters while classes are in session. A professional director and staff provide a program combining planned activities and supervised play. Children starting at age 3 (children must be turning three by December 1st), provided they are toilet trained, will be accepted. School- aged children (k- 5th) are welcome for after school care and during their school closings, delays, or breaks. Prior to using this service, a parent must complete all enrollment forms and obtain a receipt of pre-payment from the Bursar's Office.

## The Counseling Center

Hammond: GYTE 005, Westville TECH 101  
219 989-2366, [www.pnw.edu/counseling/](http://www.pnw.edu/counseling/)

The Counseling Center offers a range of psychological counseling services free to enrolled students at Purdue University Northwest toward enhancing student academic and personal success. Services are provided in an individual, couples, or group format and which may include brief counseling and psychotherapy and psychological assessment. Referral, consultation and psycho-educational outreach presentations are also provided. These services are provided by licensed mental health professionals and doctoral extern counselors under their supervision. All psychological services are confidential as protected by law. Personal issues such as adjustment to college/work, relationship concerns, anxiety, depression, alcohol and drug use, body image/eating problems are only some of the many concerns that may be addressed in counseling. Referrals to qualified professionals in the community are made available. Counseling Center staff also refer to medical providers and collaborate with medical prescribers for students who are in need of psychotropic medication(s).

## Office of the Dean of Students

Hammond Location: Room 313, Student Union Library Building

Westville Location: Room 103, Library-Student-Faculty Building

The Dean of Students Office connects individuals to resources, provides support, administers student policies, and promotes initiatives which help strengthen the campus community. (<http://www.pnw.edu/dean-of-students> ).

The Dean of Students Office promotes responsibility and encourages honesty, integrity, and respect among Purdue Northwest students through education, compliance with behavioral standards, and support of individual rights.

To sustain this mission we are committed to:

- Working collaboratively with students, faculty, and staff to create an ethical and safe environment in which scholarship may flourish
- Promoting good citizenship among students and administer conduct standards in a fair, respectful, and equitable manner
- Disseminating and interpreting University regulations and standards to students, faculty, staff, parents, and the general community
- Promoting compliance with the spirit and intent of the Bill of Students Rights and University Code of Conduct
- Serving as a resource and information agency for students, faculty, staff, parents and others concerning student rights and standards
- Guiding students toward a greater sense of personal responsibility and mature and ethical behavior that enhances the quality of the University and community environment
- Providing guidance and educational experiences to assist students in making appropriate choices concerning behavior

- Encouraging students to understand the consequences of the decisions they make and the actions they take in an attempt to help their holistic development for good citizenry

## Respect Boundaries: Sexual Violence Awareness Program

Purdue Northwest is committed to maintaining a positive and safe environment free from all forms of harassment, including sexual harassment. In addition, the University complies with several federal laws, including the Campus Sexual Violence Elimination (SaVE) Act. SaVE requires students to receive primary prevention and education awareness about sexual violence. PNW provides Respect Boundaries online training to new incoming students and transfer students via our Learning Management System, Blackboard Learn. Respect Boundaries consists of three modules: Purdue University Policies and Procedures, Risk Reduction and Prevention, and Supporting Survivors. Please contact the Office of the Dean of Students at [dos@pnw.edu](mailto:dos@pnw.edu) or call the Hammond location, (219) 989-4141, or the Westville location, (219) 785-5230.

## Veteran Services

The Veteran Services Office offers unique services to veteran students including assistance and advice for VA claims, priority registration, fee deferment, tutoring, and provides support in the transition from military to academic life. Both locations on the Hammond (SUL 335, 219-989-2727) and Westville (DSSAC 1002, 219-785-5230) campuses offer dedicated space with access to computers, CAC Readers, television, complimentary coffee and an informal location to network and study.

Purdue Northwest has been designated a Military Friendly Institution.

## Military and Veteran Certification Services

To ensure veteran educational benefits can be processed in a timely manner, veterans planning on using their educational benefits should communicate early with the Veterans Certifying Officials in the Office of the Registrar:

**Hammond:** Lawshe Room 130, (219) 989-2177

**Westville:** Schwarz Hall Room 40, (219) 785-5341

## Enrollment Management and Student Affairs

Office of the Vice Chancellor for Enrollment Management and Student Affairs

Lawshe Hall Room 352 and Schwarz Hall Room 136, 219/989-2367

The Office of Vice Chancellor for Enrollment Management and Student Affairs (VCEMSA) is responsible for coordinating services which are designed to recruit and enroll students in a campus environment in which students are able to develop and succeed, academically, intellectually and personally. Enrollment Management and Student Affairs includes the following offices: : Admissions (including International Admissions), Financial Aid and Scholarships, Registrar's Office, EMSA Reporting and Operational Intelligence, Housing and Residential Education, Office of the Dean of Students, Student Support and Advocacy, Campus Life and Student Activities, Student Organization and Leadership Development, Student Government, Counseling Center, Disability Access Center, Student Conduct, Career Services Center, TRIO/Educational Opportunity Program, Lions Cub Childcare Center, Office of Veterans Services, McNair Achievement Program, 21st Century Scholars Program, Upward Bound and College Bound Programs, New Student Orientation and Testing Services, and University Welcome Centers.

The Division of Enrollment Management and Student Affairs staff assist with creating a student centered environment designed for student success through services and programs administered outside of and in conjunction with academic programs. The staff, faculty and the student leaders with whom they partner are committed to a team approach to creating this supportive environment that is the hallmark of a Purdue University Northwest.

## Housing and Residential Education

University Village, located on the Hammond Campus, provides fully furnished apartments as well as social resources to any student that wants to take their PNW education to the next level.

Each apartment features four private bedrooms, two bathrooms, a common living room and a fully equipped and furnished kitchen/dining room. The facilities are designed to provide convenience and comfort in an environment that supports the academic success of its residents.

The University Village community is overseen by the staff of the Department of Housing and Residential Education and is located at the south end of the Hammond campus, along 173rd Street, right next to the Fitness and Recreation Center. The Department of Housing and Residential Education offers three options for student housing contracts: an annual year (August to August), an academic year (August to May), and summer (May to August). Students interested in living on-campus are encouraged to visit the Department of Housing and Residential Education website at [www.pnw.edu/housing](http://www.pnw.edu/housing), email [housing@pnw.edu](mailto:housing@pnw.edu) or call (219) 989-4150 for more information.

## Amenities

- Apartment-style living
- Full kitchen with dishwasher and garbage disposal
- High Definition Cable TV service- including HBO
- Wi-Fi throughout the complex
- Laundry rooms on each floor
- 24-hour computer labs
- 24-hour emergency response staff to handle resident concerns
- 24-hour front desks to address student needs and ensure safety
- Swipe card access to buildings and apartments
- A music practice room
- Outdoor Patio (Griffin Hall)
- Quiet study rooms
- Well-lit on-site parking
- Free shuttle service for shopping, and much more

The Westville campus is primarily a commuter campus. Limited housing accommodations are available adjacent to the campus./

## Information Services

Information Services provides a number of resources for students to facilitate success in your academic program. Some of these services include:

### Customer Service Center (CSC)

**Locations:** Hammond Campus: Powers Building 216; Westville Campus: Tech Building 265

**Website:** <http://www.pnw.edu/csc>

**Phone Number:** 219-989-2888

**Email:** [csc@pnw.edu](mailto:csc@pnw.edu)

**For hours of operation, please visit our website.**

The Customer Service Center is the single point of contact and the channel between users and Information Services for dealing with a variety of technology service activities. This includes incidents, inquiries, outages, access and service requests for assistance. The CSC logs and monitors incidents and service requests in the centralized ticket system.

#### *Walk-In Knowledge Bar & Tech Support*

- Easily accessible at both campuses
- Walk-up support
- Updated comfortable seating
- Charging stations, power outlets and data ports to keep you powered up
- Password changes
- Outlook Support, etc.

#### *Wireless Network (eduroam)*

- eduroam is Purdue University Northwest's secure wireless network
- Connects wireless-ready laptops, tablets, and phones to the PNW network and the Internet
- Accessible throughout all campus buildings and select green spaces
- All connections to eduroam are authenticated and encrypted in order to help protect your data

- Login with [careeraccount@pnw.edu](mailto:careeraccount@pnw.edu) as your username and your career account password

#### *Email*

- Each student is provided with a university email account.
- <http://www.pnw.edu/mypnw>  
Email is an essential communication tool used by faculty, staff, and students on campus. We encourage you to check your university e-mail account regularly to ensure you do not miss receiving important information related to your classes and status within the University.

#### *Computer Labs*

**Locations: Various (see below)**

**Website:** <https://www.pnw.edu/information-services/labs-and-classrooms/>

**Telephone: 219-989-2888**

**For hours of operation, please visit our website.**

#### *Open Access Computers:*

- Provide basic computing services such as Microsoft Office
- Open to all students
- Loaded with software that can be utilized for homework, research and class projects

#### **Hammond Campus Locations:**

Gyte Learning Commons, Gyte 035, 040, 044, 045 & 048  
Anderson, Classroom Office (CLO) and Porter Buildings  
University Village – Peregrine and Griffin Hall  
Library – Student Union Library (SUL) Building  
Specialized computer labs available through your academic department

#### **Westville Campus Locations:**

Tech Building 265 & Tech Building 053  
Library – Library Student Faculty (LSF) Building  
Specialized computer labs available through your academic department

## University Libraries

#### **Locations & Telephones:**

**Hammond Campus - Student Union & Library (SUL), 2<sup>nd</sup> floor 219-989-2224**

**Westville Campus – Library Student Faculty Building (LSF), 2<sup>nd</sup> floor, 219-785-5248**

**Website:** <http://www.pnw.edu/library/>

**For hours of operation, please visit our website.**

- Accessible, trusted, and indispensable learning environment, fundamental to student academic achievement in college
- Deliver high quality information, provide excellent guidance in its use
- Promote learning in attractive, technologically advanced, and personally comfortable environment

## Learning Technologies

**Location:** Gyte-143, Hammond Campus

**Telephone:** 219-989-2873

**Website:** <http://www.pnw.edu/learning-technologies/>

**Email:** [oit@pnw.edu](mailto:oit@pnw.edu)

**For hours of operation, please visit our website.**

- Blackboard Support  
Media Lab - Providing students with the materials and facilities to create effective and professional computer mediated instruction
- The Media Lab consists of iMac computers - all equipped with the Microsoft Office, Adobe Master Suite, iLife, Digital media, and Internet software
- High-output, high-quality black/white laser printing is available throughout the lab
- The lab is open but priority is given to School of Education students
- Closed to public when classes or training is being held within the lab

### Acceptable Use Policies

All Purdue Information Technology Policies are maintained in West Lafayette. Information regarding these policies can be found by going to the links below.

Email Policy <https://www.purdue.edu/policies/information-technology/via1.html>

Technology Acceptable Use Policy <https://www.purdue.edu/policies/information-technology/via2.html>

All Purdue Information Technology Policies <https://www.purdue.edu/policies/information-technology.html>

## PNW Sports and Recreation

### Recreation

Fitness and Recreational Sports provides a wide range of opportunities to improve and maintain your health. A comprehensive package of recreational activities includes intramural sports, fitness activities, outdoor recreation and special events. Campus facilities for recreation include basketball courts, disc golf course, group fitness classes, locker rooms, and indoor game rooms at both locations. The Westville campus' facilities include tennis courts and walking/jogging trails. Both locations have a dedicated fitness center, including the one located in the James B. Dworkin Student Activities Center in Westville, and the Fitness & Recreation Center (FNRC) in Hammond.

### Sports

Purdue University Northwest fields teams in men's baseball, men and women's basketball, men and women's cross-country, men's golf, men and women's soccer, women's softball, men and women's tennis, and women's volleyball. A cheerleading squad supports athletics and other campus activities. Additional club sports programs exist or can be started if sufficient student interest and funding exists.

## Intercollegiate Student-Athlete Academic Support Program

The Intercollegiate Student-Athlete Academic Support Program is a program designed to aid student-athletes in achieving success through providing personalized academic guidance, appropriate tutoring by subject, special interest workshops and referrals to other necessary services as needed. Through collaboration and integration with campus resources, programs and services are designed to enhance student athletes' overall development, well-being, and undergraduate experience.

### Testing Center

Purdue Northwest offers testing centers at each location – Hammond and Westville. Both centers offer placement testing for English, Math and Foreign Languages (French, German and Spanish). Placement testing for English is completed in the center at both locations. Please call ahead regarding appointment and identification requirements. Math and Foreign Language placement testing may be completed remotely through the MyPNW Portal.

The Testing Center also offers the SAT on Campus and ACT Residual, proctored testing, make-up exams, distance education exams, and [CLEP examinations](#), as well as providing national testing for the SAT, ACT, and GRE Subject. More information can be found at: <https://centers.pnw.edu/testing-services/>.

#### Our Locations:

##### Hammond

Lawshe Hall  
Room 118  
219/989-2504

##### Westville

Library Student Faculty Building  
Room 202  
219-785-5326

## University Police

The PNW University Police Department conducts motorized, foot and bike patrols throughout the campus and responds to all calls for service. Our officers embrace community policing while patrolling the area around campus. The department is equally responsible for traffic and parking enforcement and investigating all suspicious or criminal activity, motor vehicle accidents, and medical emergencies. Motorists in need of assistance may call the police department.

Escorts on campus are handled on request, University Police also oversees building access control, staff ID's and transportation services. The University Police, in conjunction with University Facilities Services, creates, approves and distributes key cards for offices and rooms.

Hammond: University Police Building - Emergency; (To report emergencies dial 911. If using a campus phone dial 9-911) 219/989-2220; Business, Email - UNPOL@pnw.edu . Business Lobby Hours: 8:00AM to 5:00PM, Police Department Hours - 24/7

Westville: University Police Building - Emergency; (To report emergencies dial 911 from a campus phone. Dial 219/785-5220 from a cell phone.) 219/785-5220 - Business, Email - campus\_police@pnw.edu. Business Lobby Hours - 8:00AM to 10:00PM . Police Department Hours - 24/7

# College of Business

## College of Business

*Jane Mutchler, PhD, Dean*

[www.pnw.edu/business](http://www.pnw.edu/business)

The innovative programs in the College of Business will prepare you to meet the needs of today's global business environment and provide you with opportunities to develop your leadership potential.

Competitions and experiential learning courses help you build a portfolio of work to impress employers. In the process, you will discover your passions, learn how to work as an effective team member, and develop innovative ways of thinking through cutting-edge technology and learning experiences.

Our students work with community partners in several exciting ways. Small Business Consulting students work with small businesses to identify and solve problems. Marketing students pair with SBDC-identified companies to build and implement Google AdWords campaigns for them. In our Center for Business and Economic Development Solutions, students work alongside faculty to solve real world business problems. Accounting students work with the VITA program to do taxes for the elderly and needy in our community. Our HTM students run a lunch and dinner restaurant for the campus and the community.

Our engaged and dedicated faculty, many of whom remain working in their areas of expertise, will lead you from the classroom to career with innovative and challenging learning experiences.

We'll help you connect with top employers in our new Center for Career Management and through professional development seminars built into your curriculum.

Our graduates work for local, national, and international companies including People's Bank, White Lodging, Aerotek, Hadady Corporation, Apple, KPMG, Exelon, Ritz Carlton, Four Seasons, Morningstar, Accenture, Starbucks, Coca Cola, Ernst & Young, PwC, Airbnb, Disney, Pratt Industries, Zimmer Biomet, Aflac, the Chicago Board Options Exchange, and the World Bank.

Please visit our website and click on individual degree programs to learn more about the courses you will take and discover the opportunities awaiting you in your program of interest. Please contact us if you have questions. Alternatively, just schedule a visit. We look forward to meeting you.

## Accreditations

All of the undergraduate programs in the College of Business are nationally accredited at the highest levels. This ensures that each program is independently reviewed and meets the quality expectation for that profession.

- Business Programs-Accredited by the Association to Advance Collegiate Schools of Business, International (AACSB) <http://www.aacsb.edu>.
- Hospitality and Tourism Management Programs- Accredited by the Accreditation Commission for Programs in Hospitality Administration (ACPHA) <http://www.acpha-cahm.org/>

## Minors

Minors offered at Purdue Northwest.

## Department of Managerial Studies

### Bachelor of Science in Business

### Human Resource Management, BSB

#### Degree Requirements

#### PNW General Education Core (31 Credits Minimum)

#### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

### Quantitative Reasoning (3 Credits)

- MA 15300 - College Algebra or higher

### Natural Sciences (3 Credits)

Select from the Natural Sciences Core list

### Technology (3 Credits)

- ISM 10200 - Computer Utilization For Management

### Humanities (3 Credits)

Select from the Humanities Core list

### Social Sciences (3 Credits)

- SOC 10000 - Introductory Sociology  
or
- PSY 12000 - Elementary Psychology

### General Ed Elective (3 Credits)

Select a course off the Core list, except for FYE

### First-Year Experience (FYE) (1 Credit)

- BUSM 10000 - Freshman Seminar In Business

### Additional Credits (3 Credits)

Three (3) additional credits required

### Supplemental Core (9 Credits)

- BUSM 22500 - Fundamental Managerial Statistics  
or
- STAT 30100 - Elementary Statistical Methods
- BUSM 34400 - Business Ethics  
or
- PHIL 32400 - Ethics For The Professions
- BUSM 32000 - Business Communication

### Business Core (42 Credits)

- BUSM 10100 - Introduction To Business
- ACC 20000 - Introductory Accounting
- ACC 20100 - Management Accounting I
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- FIN 31000 - Financial Management
- MKG 22400 - Principles Of Marketing
- OBHR 33000 - Introduction To Organizational Behavior
- BUSM 35400 - Legal Foundations Of Business I
- ISM 21100 - Principles Of Information Systems
- BUSM 36000 - Production And Operations Management
- BUSM 38000 - International Business or BUSM 40100 - Global Business
- BUSM 45000 - Strategic Management: Capstone
- BUSM 20000 - Second Year Seminar in Business
- BUSM 30000 - Third Year Seminar In Business



- BUSM 40000 - Fourth Year Seminar In Business

### Major Core (30 Credits)

- OBHR 43100 - Human Resources Management
- OBHR 43000 - Labor Relations
- OBHR 43400 - Benefits Administration
- OBHR 43300 - Staffing Organizations
- OBHR 42600 - Training and Managerial Development

### OBHR Electives (9 Credits)

OBHR 43100 is a pre-requisite for the courses listed in this note.

Choose any (3) courses from:

- OBHR 42700 - Occupational Safety And Health
- OBHR 43500 - Compensation Management
- OBHR 43600 - Collective Bargaining
- OBHR 43900 - Employment Law
- OBHR 44400 - Leadership
- OBHR 44800 - Human Resources Information Systems
- OBHR 49000 - Problems In Organizational Behavior

### Business Electives, 300 Level + (6 Credits)

Any (2) College of Business course 30000 level or higher. College of Business subject codes include: ACC, BIZA, BUSM, CIS, ENTR, FIN, ISM, MKG, and OBHR.

### Other Required Courses (9 Credits)

### Free Electives (9 Credits)

Any (3) course 10000 level or higher **except for** CHM 10000, GNS 29000, MA 11100, and MA 11500

### Total 120 Credits Required

**Effective Fall 2016, newly admitted students or students initiating a Change of Degree or Major at either location (Hammond or Westville) will be pursuing the degree "Bachelor of Science in Business with a major in Human Resources." Formerly, this degree option was known as "Bachelor of Science with a major Human Resources" at the North Central campus.**

## Leadership, BSB

### Degree Requirements

### PNW General Education Core (31 Credits Minimum)

#### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

#### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

#### Quantitative Reasoning (3 Credits)

- MA 15300 - College Algebra or higher

#### Natural Sciences (3 Credits)

Select from the Natural Sciences Core list

#### Technology (3 Credits)

- ISM 10200 - Computer Utilization For Management

#### Humanities (3 Credits)

Select from the Humanities Core list

#### Social Sciences (3 Credits)

- SOC 10000 - Introductory Sociology  
or
- PSY 12000 - Elementary Psychology

### **Additional Credits (3 Credits)**

- STAT 30100 - Elementary Statistical Methods  
or
- BUSM 22500 - Fundamental Managerial Statistics

### **General Ed Elective (3 Credits)**

Select a course off course list, except FYE

### **First-Year Experience (FYE) (1 Credit)**

- BUSM 10000 - Freshman Seminar In Business

### **Business Core (42 Credits)**

- BUSM 10100 - Introduction To Business
- ACC 20000 - Introductory Accounting
- ACC 20100 - Management Accounting I
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- FIN 31000 - Financial Management
- MKG 22400 - Principles Of Marketing
- OBHR 33000 - Introduction To Organizational Behavior
- BUSM 35400 - Legal Foundations Of Business I
- ISM 21100 - Principles Of Information Systems
- BUSM 36000 - Production And Operations Management
- BUSM 38000 - International Business
- BUSM 45000 - Strategic Management: Capstone
- BUSM 20000 - Second Year Seminar in Business
- BUSM 30000 - Third Year Seminar In Business
- BUSM 40000 - Fourth Year Seminar In Business

### **Major Core (18 Credits)**

- OBHR 42300 - Negotiations
- OBHR 43800 - Managing Workforce Diversity
- OBHR 44100 - Introduction To Organizational Change And Development
- OBHR 44400 - Leadership
- OBHR 44500 - Team Dynamics
- OBHR 49400 - Leadership Capstone

### **Other Required Courses (29 Credits)**

- BUSM 34400 - Business Ethics  
or
- PHIL 32400 - Ethics For The Professions
- BUSM 32000 - Business Communication

### **Free Electives (12 Credits)**

Any (4) courses 10000 level or higher except for CHM 10000, GNS 29000, MA 11100, and MA 11500.

### **Business Electives (6 Credits)**

Any (2) College of Business courses 30000 level or higher. College of Business subject codes include: ACC, BIZA, BUSM, CIS, ENTR, FIN, ISM, MKG, and OBHR.

### **OBHR Electives (6 Credits)**

Any (2) OBHR courses higher than 30000

## **Total 120 Credits Required**

**Effective Fall 2016, newly admitted students at the North Central campus or students initiating a Change of Degree or Major at either location (Hammond or Westville) will be pursuing the degree "Bachelor of Science, major in Leadership." Formerly, this degree option was known as "Bachelor of Science with a major in Organizational Leadership and Supervision" at the North Central campus.**

## **Management, BSB**

Purdue Northwest offers a Bachelor of Science degree in Business that has been designed to help students develop a broad perspective of the business organization and the environment in which it operates. A distinctive and flexible general education component establishes a solid foundation that facilitates your ability to respond to changing employment opportunities even after you graduate. Through a series of core courses and with the guidance of experienced faculty, you'll be introduced to the broad range of knowledge and skills needed to begin or advance a career in a wide range of enterprises.

## **Degree Requirements**

### **PNW General Education Core (31 Credits Minimum)**

#### **English Composition (6 Credits)**

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

#### **Speech Communication (3 Credits)**

- COM 11400 - Fundamentals Of Speech Communication

#### **Quantitative Reasoning (3 Credits)**

- MA 15300 - College Algebra or higher

#### **Natural Sciences (3 Credits)**

Select from the Natural Sciences Core list

#### **Technology (3 Credits)**

- ISM 10200 - Computer Utilization For Management

#### **Humanities (3 Credits)**

Select from the Humanities Core list

#### **Social Sciences (3 Credits)**

- SOC 10000 - Introductory Sociology
- or
- PSY 12000 - Elementary Psychology

#### **Additional Credits (3 Credits)**

- STAT 30100 - Elementary Statistical Methods (NC)
- or
- BUSM 22500 - Fundamental Managerial Statistics (Cal)

#### **General Ed Elective (3 Credits)**

Select a course off course list, except FYE

#### **First-Year Experience (FYE) (1 Credit)**

- BUSM 10000 - Freshman Seminar In Business

#### **Business Core (42 Credits)**

- BUSM 10100 - Introduction To Business
- ACC 20000 - Introductory Accounting
- ACC 20100 - Management Accounting I
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics

- FIN 31000 - Financial Management
- MKG 22400 - Principles Of Marketing
- OBHR 33000 - Introduction To Organizational Behavior  
or
- OBHR 22100 - Principles Of Management
- BUSM 35400 - Legal Foundations Of Business I
- ISM 21100 - Principles Of Information Systems
- BUSM 36000 - Production And Operations Management
- BUSM 38000 - International Business
- BUSM 45000 - Strategic Management: Capstone
- BUSM 20000 - Second Year Seminar in Business  
and
- BUSM 30000 - Third Year Seminar In Business
- BUSM 40000 - Fourth Year Seminar In Business

### Major Core (24 Credits)

- BUSM 35100 - Organization Theory And Design
- OBHR 43100 - Human Resources Management
- BUSM 35300 - Organization And Environment
- ISM 32500 - Logistics
- BUSM 33300 - Total Quality Management
- BUSM 34000 - Managerial Decision Analysis
- ISM 48700 - Knowledge And Decision Management
- BUSM 41100 - Entrepreneurship And Employee Innovation

### Other Required Courses (5 Credits)

- PHIL 32400 - Ethics For The Professions  
or
- BUSM 34400 - Business Ethics
- BUSM 32000 - Business Communication

### Electives (18 Credits)

#### Business Electives (6 Credits)

Any (2) College of Business courses 30000 level or higher. College of Business subject codes include: ACC, BIZA, BUSM, CIS, ENTR, FIN, ISM, MKG, and OBHR.

#### Free Electives (12 Credits)

Any (4) courses 10000 level or higher except for CHM 10000, GNS 29000, MA 11100 and MA 11500

### Total 120 Credits Required

**Effective Fall 2016, newly admitted students at the North Central campus or students initiating a Change of Degree or Major at either location (Hammond or Westville) will be pursuing the degree "Bachelor of Science in Business with a major in Management." Formerly, this degree option was known as "Bachelor of Science with a major in Business, and a concentration in Management" at the North Central campus.**

## Marketing, BSB

Purdue Northwest offers a Bachelor of Science degree in Business that has been designed to help students develop a broad perspective of the business organization and the environment in which it operates. A distinctive and flexible

general education component establishes a solid foundation that facilitates your ability to respond to changing employment opportunities even after you graduate. Through a series of core courses and with the guidance of experienced faculty, you'll be introduced to the broad range of knowledge and skills needed to begin or advance a career in a wide range of enterprises.

## Degree Requirements

### PNW General Education Core (31 Credits Minimum)

#### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

#### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

#### Quantitative Reasoning (3 Credits)

- MA 15300 - College Algebra or higher

#### Natural Sciences (3 Credits)

Select from the Natural Sciences Core list

#### Technology (3 Credits)

- ISM 10200 - Computer Utilization For Management

#### Humanities (3 Credits)

Select from the Humanities Core list

#### Social Sciences (3 Credits)

- SOC 10000 - Introductory Sociology  
or
- PSY 12000 - Elementary Psychology

#### Additional Credits (3 Credits)

- STAT 30100 - Elementary Statistical Methods (NC)  
or
- BUSM 22500 - Fundamental Managerial Statistics (Cal)

#### General Ed Elective (3 Credits)

Select a course off course list, except FYE

#### First-Year Experience (FYE) (1 Credit)

- BUSM 10000 - Freshman Seminar In Business

### Business Core (42 Credits)

- BUSM 10100 - Introduction To Business
- ACC 20000 - Introductory Accounting
- ACC 20100 - Management Accounting I
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- FIN 31000 - Financial Management
- MKG 22400 - Principles Of Marketing
  
- OBHR 33000 - Introduction To Organizational Behavior
- BUSM 35400 - Legal Foundations Of Business I
  
- ISM 21100 - Principles Of Information Systems
- BUSM 36000 - Production And Operations Management

- BUSM 38000 - International Business
- BUSM 45000 - Strategic Management: Capstone
- BUSM 20000 - Second Year Seminar in Business and
- BUSM 30000 - Third Year Seminar In Business
- BUSM 40000 - Fourth Year Seminar In Business

### Major Core (30 Credits)

- MKG 43300 - Personal Selling
- MKG 42400 - Consumer Behavior
- MKG 42500 - Marketing Research
- MKG 42600 - Marketing Channels
- MKG 43000 - Advertising Campaigns I
- MKG 48000 - Marketing Strategy  
or
- MKG 42900 - Advertising Campaigns II
- MKG 42200 - International Marketing

### Digital Marketing Elective (3 Credits)

May select one from the following:

- MKG 42000 - Digital Marketing Campaigns
- MKG 42800 - Advertising Management
- MKG 33400 Credit Hours: 3.00
- MKG 37500 Credit Hours: 3.00
- MKG 43400 - Digital Marketing Strategy

### Business Electives (6 Credits)

Any (2) College of Business courses 30000 level or higher. College of Business subject codes include: ACC, BIZA, BUSM, CIS, ENTR, FIN, ISM, MKG, and OBHR.

### Other Required Courses (17 Credits)

- BUSM 34400 - Business Ethics  
or
- PHIL 32400 - Ethics For The Professions
- BUSM 32000 - Business Communication

### Free Electives (12 Credits)

Any (4) courses 10000 level or higher **except for** CHM 10000, GNS 29000, MA 11100, and MA 11500

### Total 120 Credits Required

**Effective Fall 2016, newly admitted students at the North Central campus or students initiating a Change of Degree or Major at either location (Hammond or Westville) will be pursuing the degree "Bachelor of Science in Business with a major in Marketing." Formerly, this degree option was known as "Bachelor of Science with a major in Business, and a concentration in Marketing" at the North Central campus.**

## Sports Management, BSB

### Degree Requirements

PNW General Education Core (31 Credits Minimum)

English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

### Quantitative Reasoning (3 Credits)

- MA 15300 - College Algebra

### Natural Sciences (3 Credits)

- SCI 10500 - Invitation To Human Biology

### Technology (3 Credits)

- ISM 10200 - Computer Utilization For Management

### Humanities (3 Credits)

- PHIL 32400 - Ethics For The Professions  
or
- BUSM 34400 - Business Ethics

### Social Sciences (3 Credits)

- SOC 10000 - Introductory Sociology

- PSY 12000 - Elementary Psychology

### Additional Credits (3 Credits)

- BUSM 22500 - Fundamental Managerial Statistics  
or
- STAT 30100 - Elementary Statistical Methods

### General Ed Elective (3 Credits)

- ECON 25100 - Microeconomics

### First-Year Experience (FYE) (1 Credit)

- BUSM 10000 - Freshman Seminar In Business

### Business Core (39 Credits)

- ACC 20000 - Introductory Accounting
- ACC 20100 - Management Accounting I
- BUSM 45000 - Strategic Management: Capstone
- BUSM 38000 - International Business
- BUSM 35400 - Legal Foundations Of Business I
- BUSM 36000 - Production And Operations Management
- BUSM 10100 - Introduction To Business
- BUSM 20000 - Second Year Seminar in Business
- BUSM 30000 - Third Year Seminar In Business
- BUSM 40000 - Fourth Year Seminar In Business
- ECON 25200 - Macroeconomics
- FIN 31000 - Financial Management
- ISM 21100 - Principles Of Information Systems
- MKG 22400 - Principles Of Marketing
- OBHR 33000 - Introduction To Organizational Behavior

### Major Core (30 Credits)

- FN 30300 - Essentials Of Nutrition
- FN 40001 - Nutrition For Sports Performance or FN 42200 - Community Nutrition And Health Promotion  
Entrepreneurship

- MKG 42400 - Consumer Behavior
- MKG 42600 - Marketing Channels
- MKG 43400 - Digital Marketing Strategy , MKG 42100 - Intergrated Market Communication, MKG 42800 - Advertising Management, or MKG 43300 - Personal Selling
- SPTM 30100 - Practicum In Intercollegiate Athletics
- SPTM 31200 - Organization And Management Of The Sports Industry
- SPTM 32200 - Facilities Design And Property Management
- SPTM 40200 - Internship In Sports Management
- SPTM 41500 - Public/Private Sports Club Management
- SPTM 42000 - Sports Event Planning, Promotion And Media Relations

### Other Required Courses (20 Credits)

- BUSM 32000 - Business Communication
- FN 26100 - Nutrition For Health, Fitness, And Sports
- FM 16800 - Foundations In Exercise Physiology
- OBHR 43100 - Human Resources Management
- SPAN 10600 - Spanish For Business I

#### Individualized Wellness Electives

*Choose Two:*

- FM 10100 - Cardiovascular Exercise Machines
- FM 10200 - Weight Training
- FM 10300 - Walking/Jogging
- FM 10400 - Physical Fitness
- FM 10500 - Yoga
- FM 10600 - Racquetball
- FM 10700 - Basic Self-Defense

### Free Electives (6 Credits)

### Total 120 Credits Required

## Master of Business Administration

### Master Business Administration - Executive, MBA

The program effectively requires that all graduate students complete a minimum of 42 graduate credit hours.

1. The EMBA is a lock-step program that consists of 42 credit hours. Students complete the requirements of the degree in 15 months.
2. Students may start the program in September (Fall).
3. Courses are offered in 5- and 10-week modules. All course are offered on Saturdays.

### Admission Requirements

1. Proof of baccalaureate degree with a graduate index of 3.0/4.0.
2. Five years of professional or managerial work experience.
3. Recommended: College Algebra or Finite Mathematics

### Degree Requirements

- MGMT 51300 - Economics for Managers
- MGMT 57000 - Spreadsheet Modeling and Simulation
- MGMT 60000 - Accounting For Managers
- MGMT 61100 - Advanced Corporate Finance
- MGMT 62000 - Marketing Management
- MGMT 63000 - Legal And Social Foundations Of Management



- MGMT 64000 - International Business
- MGMT 64700 - International Business Practicum
- MGMT 65000 - Strategic Management I
- MGMT 66000 - Introduction To Operations Management
- MGMT 66400 - Supply Chain Management
- MGMT 67000 - Business Analytics
- MGMT 68300 - Information Technology for Innovations and Competitive Advantage
- MGMT 69000 - Advanced Problems In Management
- OBHR 66200 - Leadership
- OBHR 68100 - Managing Behavior In Organizations

## Total 42 Credits Required

## Master Business Administration - Professional, MBA

The program effectively requires that all graduate students complete a minimum of 42 graduate credit hours.

1. The PMBA is a lock-step program that consists of 42 credit hours. Students complete the requirements of the degree in two years.
2. Students may start the program in either August (Fall) or January (Spring).
3. Courses are offered in 8- and 16-week modules. All course are offered in the evening.

## Admission Requirements

1. Proof of baccalaureate degree with a graduate index of 3.0/4.0.
2. Three years of professional work experience.
3. Recommended: College Algebra

## Degree Requirements

- MGMT 51300 - Economics for Managers
- MGMT 59000 - Directed Readings In Management - Practicum 1 (Management)
- MGMT 59000 - Directed Readings In Management - Practicum 2 (Operations/MIS)
- MGMT 59000 - Directed Readings In Management - Practicum 3 (Marketing)
- MGMT 59000 - Directed Readings In Management - Practicum 4 (Finance)
- MGMT 60000 - Accounting For Managers
- MGMT 61100 - Advanced Corporate Finance
- MGMT 61200 - Financial Management III
- MGMT 62000 - Marketing Management
- MGMT 63000 - Legal And Social Foundations Of Management
- MGMT 64000 - International Business
- MGMT 65000 - Strategic Management I
- MGMT 66000 - Introduction To Operations Management
- MGMT 67000 - Business Analytics
- MGMT 67200 - Advanced Business Analytics
- MGMT 68300 - Information Technology for Innovations and Competitive Advantage
- OBHR 63300 - Human Resource Management
- OBHR 66200 - Leadership

## Total 42 Credits Required

## Master Business Administration, MBA

The program effectively requires that all graduate students complete a minimum of 45 graduate credit hours.

4. The MBA program consists of 45 credit hours of Graduate courses. Students may complete the requirements of the degree typically in two years.
5. Students may start the program in either August (Fall), January (Spring), or May (Summer).

6. Courses are offered in 8- and 16-week modules. All course are offered in the evening.

## Admission Requirements

1. Proof of baccalaureate degree with a graduate index of 3.0/4.0 and satisfactory performance on the GMAT examination, with a minimum score of 500.
2. Capacity for management responsibility.
3. Recommended: College Algebra

## Degree Requirements

### Foundation Courses (19 Credits)

- MGMT 51300 - Economics for Managers
- MGMT 60000 - Accounting For Managers
- MGMT 61100 - Advanced Corporate Finance
- MGMT 63000 - Legal And Social Foundations Of Management
- MGMT 64000 - International Business
- MGMT 67000 - Business Analytics
- MGMT 68300 - Information Technology for Innovations and Competitive Advantage
- OBHR 63300 - Human Resource Management
- OBHR 68100 - Managing Behavior In Organizations

### Business Core Courses (14 Credits)

- MGMT 61200 - Financial Management III
- MGMT 62000 - Marketing Management
- MGMT 66000 - Introduction To Operations Management
- MGMT 67200 - Advanced Business Analytics
- MGMT 65000 - Strategic Management I

### Elective Courses (12 Credits)

Any approved 50000 or 60000 level courses offered by the College of Business.

## Concentrations Offered

### MBA/Information Systems

Foundation and Business Core Courses (33 credit hours) plus four concentration courses (12 credit hours) chosen from the list below:

- MGMT 54400 - Database Management Systems
- MGMT 54600 - Decision Support And Expert Systems
- MGMT 57000 - Spreadsheet Modeling and Simulation
- MGMT 59000 - Directed Readings In Management (Advanced E-Business Applications)
- MGMT 59000 - Directed Readings In Management (Advanced Project Management)
- MGMT 59000 - Directed Readings In Management (Advanced E-Business Strategy)
- MGMT 59000 - Directed Readings In Management (Advanced Systems Analysis and Design)
- MGMT 59000 - Directed Readings In Management (Advanced Excel Applications)
- MGMT 66400 - Supply Chain Management
- Or other courses approved by the MBA Director

### MBA/Accounting

Foundation and Business Core Courses (33 credit hours) plus four concentration courses (12 credit hours) chosen from the list below:

- MGMT 50100 - Advanced Taxation
- MGMT 50300 - Advanced Accounting
- MGMT 50500 - Management Accounting II
- MGMT 50600 - Auditing

- MGMT 50900 - International Accounting
- MGMT 51500 - Fraud Investigation
- MGMT 59000 - Directed Readings In Management (Governmental & Non-For-Profit Accounting)
- MGMT 59000 - Directed Readings In Management (Accounting Communications)
- MGMT 59000 - Directed Readings In Management (Corporate Governance & Ethics)
- MGMT 59000 - Directed Readings In Management (Advanced Financial Reporting)
- Or other courses approved by the MBA Director

## Transfer of Credit

Undergraduate credits may not be used to satisfy master's degree requirements. Transfer credits, in general, are not accepted. In exceptional cases, however, graduate credits not exceeding six hours may be transferred into the program. Exceptional cases are individually considered by the Graduate Committee. Transfer credits are allowed only after one semester of satisfactory work in residence at Purdue University Northwest. The minimum grade for transfer credits is a B.

## Total 45 Credits Required

## Graduate Certificate

### Economic Development Graduate Certificate

Since 2006, PNW faculty and administration have worked with the Economic Development community to explore how to improve the performance of economic development activities in the northwest Indiana region. From that work, the concept and content of an in-depth educational program emerged. The program is academically rigorous to meet graduate-level standards, yet emphasizes practical application of concepts to our region's resources and capabilities.

## Admission Requirements

1. A bachelor's degree from an accredited college or university.
2. Minimum undergraduate GPA of 3.0/4.0 with the possibility of conditional admission for applicants who do not meet this requirement.

Please contact the Office of Graduate Studies for more information.

## Certificate Requirements

Each course to be applied toward the Certificate must be completed with a grade of "B" or better.

- ECON 55100 - Competitive Advantage Of A Region
- ECON 55200 - Introduction To Economic Development
- ECON 55300 - Economic And Social Analysis

## Total 9 Credits Required

## Minor

### Business Minor

This minor is intended for students who are **not** in the College of Business. College of Business students may **not** pursue this minor.

## Course Requirements (24 Credits)

*Minimum grade of "C-" required for each course.*

- ACC 20000 - Introductory Accounting
- ACC 20100 - Management Accounting I
- BUSM 22500 - Fundamental Managerial Statistics
- ECON 25100 - Microeconomics
- FIN 31000 - Financial Management
- OBHR 33000 - Introduction To Organizational Behavior
- or
- OBHR 43100 - Human Resources Management

- MKG 22400 - Principles Of Marketing  
or
- MKG 32400 - Marketing Management
- BUSM 33300 - Total Quality Management  
or
- BUSM 36000 - Production And Operations Management

## **Entrepreneurship Minor**

### **Course Requirements (15 Credit Hours)**

*Minimum grade of "C-" required for each course.*

#### **Required Course (3 Credits)**

- ENTR 10000 - Introduction To Entrepreneurship

#### **Elective Courses (12 Credits)**

**Select four (4) from the following:**

- BUSM 38000 - International Business
- BUSM 39100 - Internship In Business
- ENTR 30000 - Growing The Firm
- ENTR 30100 - Introduction To Technical Entrepreneurship
- ENTR 30200 - Creative Thinking And Innovation
- ENTR 30300 - Entrepreneurial Finance
- ENTR 40000 - Small Business Consulting
- ENTR 40100 - Social Entrepreneurship
- ENTR 42000 - Business Plan Development
- ISM 31800 - E-Business Strategy
- ISM 48600 - Project Management
- ISM 48700 - Knowledge And Decision Management
- OBHR 42300 - Negotiations
- OLS 35000 - Creativity In Business And Industry
- OLS 35100 - Innovation And Entrepreneurship

## **Human Resource Management Minor**

### **Course Requirements (15 Credits)**

#### **Required Courses (9 Credits)**

- OBHR 33000 - Introduction To Organizational Behavior  
or
- BUSM 10100 - Introduction To Business
- OBHR 43100 - Human Resources Management
- OBHR 43300 - Staffing Organizations

#### **Elective Courses (6 Credits)**

**Choose two:**

- OBHR 42300 - Negotiations
- OBHR 42600 - Training and Managerial Development
- OBHR 42700 - Occupational Safety And Health
- OBHR 43400 - Benefits Administration
- OBHR 43500 - Compensation Management

- OBHR 43600 - Collective Bargaining
- OBHR 43900 - Employment Law
- OBHR 44400 - Leadership
- OBHR 44800 - Human Resources Information Systems

## **Leadership Minor**

### **Course Requirements (15 Credits)**

#### **Required Courses (9 Credits)**

- OBHR 33000 - Introduction To Organizational Behavior
- OBHR 44400 - Leadership
- OBHR 44500 - Team Dynamics

#### **Elective Courses (6 Credits)**

##### **Choose Two:**

- OBHR 22100 - Principles Of Management
- OBHR 42300 - Negotiations
- OBHR 43800 - Managing Workforce Diversity
- OBHR 44100 - Introduction To Organizational Change And Development

## **Marketing Minor**

### **Course Requirements (15 Credits)**

*Minimum grade of "C-" required for each course.*

#### **Required Courses (6 Credits)**

- MKG 22400 - Principles Of Marketing  
or
- MKG 32400 - Marketing Management
- MKG 42400 - Consumer Behavior

#### **Elective Courses (9 Credits)**

##### **Choose three (3) from the following:**

- MKG 42000 - Digital Marketing Campaigns
- MKG 42100 - Integrated Marketing Communications
- MKG 42200 - International Marketing
- MKG 42500 - Marketing Research
- MKG 42600 - Marketing Channels
- MKG 42800 - Advertising Management
- MKG 43300 - Personal Selling
- MKG 43400 - Digital Marketing Strategy

## **Organizational Administration Minor**

### **Course Requirements (18 Credit Hours)**

#### **Required Courses (15 Credits)**

- ECON 21000 - Principles Of Economics
- GBG 25000 - Principles Of Business Budgeting
- GBG 25900 - Law And Society
- MGMT 32300 - Principles Of Marketing
- OLS 37600 - Human Resource Issues

#### **Elective Course (3 Credits)**

**Choose One:**

- OLS 25200 - Human Relations In Organizations
- OLS 27400 - Applied Leadership

**Sales Minor****Course Requirements (15 Credit Hours)**

*Minimum grade of "C-" is required for each course.*

**Required Courses (9 Credits)**

- MKG 43300 - Personal Selling
- MKG 48800 - Advanced Selling
- OBHR 42300 - Negotiations

**Elective Courses (6 Credits)****Choose two (2) from the following:**

- MKG 42700 - Sales Management
- MKG 49500 - Internship In Marketing
- HTM 33100 - Hospitality And Tourism Sales And Service
- COM 21400 - Comparative Theories Of Interpersonal Communication
- COM 31800 - Principles Of Persuasion

**Undergraduate Certificate****Human Resources Undergraduate Certificate**

This practical, six-course curriculum provides courses for a broad-based education essential for today's human resource professional. Students begin with three core topics in human relations, human resources, and safety. Students choose three additional courses to enhance their current or future careers, among choices such as personnel law, staffing and performance appraisal, training methods, compensation and benefits, labor/management relations and others. Courses for this certificate apply for the Associate's degree in Organizational Leadership and Supervision with an Emphasis in Human Resources or Bachelor's degree in Human Resources. Most courses are offered online; campus classes are scheduled evenings as well as daytime to meet the needs of working adults.

**Certificate Requirements**

- A minimum of 15 credit hours must be taken at Purdue University North Central.
- All certificate track students must meet admission requirements of the College of Business.
- This certificate plan of study is an entry level, pre-AS degree program.
- A 2.0 GPA is required to pursue an Associate of Science Degree.

**Required Courses (18 Credits)**

- OLS 25200 - Human Relations In Organizations
- OLS 33100 - Occupational Safety And Health
- OLS 37600 - Human Resource Issues

**Choose Three:**

- OLS 36800 - Personnel Law
- OLS 37200 - Staffing and Performance Appraisal
- OLS 37500 - Training Methods
- OLS 37800 - Labor And Management Relations
- OLS 37900 - Compensation And Benefits

**Leadership Undergraduate Certificate**

This practical, six-course curriculum provides first-line supervisors and group leaders with the professional education needed to succeed in business and industry today. Students begin with four core topics in human relations, applied leadership and supervision, change management, and team development. Students choose two additional courses to enhance their current or future careers, among choices such as introduction to business, business budgeting, industrial

organizations, and others. Courses for this certificate apply for the Associate's or Bachelor's degrees in Organizational Leadership and Supervision. Most are offered online; campus classes are scheduled evenings as well as daytime to meet the needs of working adults.

**NOTE**

A minimum of 15 credit hours must be taken at Purdue University North Central.

All certificate track students must meet admission requirements of the College of Business.

This certificate plan of study is an entry level, pre-AS degree program.

A 2.0 GPA is required to pursue an Associate of Science Degree in OLS.

## **Required Courses (18 Credits)**

- OLS 25200 - Human Relations In Organizations
- OLS 27400 - Applied Leadership
- OLS 38600 - Leadership For Organizational Change And Innovation
- OLS 38800 - Leadership Through Teams
- Choose Two:**
- GBG 12700 - Development Of Business In The United States
- GBG 25000 - Principles Of Business Budgeting
- OLS Elective 30000 level or above

## **Department of Quantitative Business Studies**

### **Bachelor of Science in Accounting**

#### **Accounting, BSA**

#### **Degree Requirements**

#### **PNW General Education Core (31 Credits Minimum)**

##### **English Composition (6 Credits)**

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

##### **Speech Communication (3 Credits)**

- COM 11400 - Fundamentals Of Speech Communication

##### **Quantitative Reasoning (3 Credits)**

- MA 15300 - College Algebra or higher

##### **Natural Sciences (3 Credits)**

Select from the Natural Sciences Core list

##### **Technology (3 Credits)**

- ISM 10200 - Computer Utilization For Management

##### **Humanities (3 Credits)**

Select from the Humanities Core list

##### **Social Sciences (3 Credits)**

- SOC 10000 - Introductory Sociology
- or
- PSY 12000 - Elementary Psychology

##### **Additional Credits (3 Credits)**

- MA 15910 - Introduction To Calculus

##### **General Ed Elective (3 Credits)**

Select courses off course list, except FYE

##### **First-Year Experience (FYE) (1 Credit)**

- BUSM 10000 - Freshman Seminar In Business

## Business Core (42 Credits)

- BUSM 10100 - Introduction To Business
- ACC 20000 - Introductory Accounting
- ACC 20100 - Management Accounting I
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- FIN 31000 - Financial Management
- MKG 22400 - Principles Of Marketing
- OBHR 33000 - Introduction To Organizational Behavior
- BUSM 35400 - Legal Foundations Of Business I
- ISM 21100 - Principles Of Information Systems
- BUSM 36000 - Production And Operations Management
- BUSM 38000 - International Business
- BUSM 45000 - Strategic Management: Capstone
- BUSM 20000 - Second Year Seminar in Business
- BUSM 30000 - Third Year Seminar In Business
- BUSM 40000 - Fourth Year Seminar In Business

## Major Core (18 Credits)

- ACC 35000 - Intermediate Accounting I
- ACC 35100 - Intermediate Accounting II
- ACC 40400 - Tax Accounting
- ACC 40600 - Auditing
- ACC 40700 - Managerial/Cost Accounting
- ACC 40900 - Accounting Information Systems

## Other Required Courses (26 Credits)

- BUSM 34400 - Business Ethics
- or
- PHIL 32400 - Ethics For The Professions
  
- BUSM 32000 - Business Communication

## Accounting Elective, 300 level + (3 Credits)

- ACC 40200 - Financial Statements Analysis
  
- ACC 49500 - Internship In Accounting
- or
- ACC 49510 - Internship In Tax Accounting
  
- ACC 49900 - Undergraduate Research In Accounting
- ACC 49000 - Independent Study In Accounting Practice Or Research

## Business Electives, 300 level + (9 Credits)

Any subject code from the College of Business

## Free Electives (12 Credits)

Any course 10000 level or higher except for CHM 10000, GNS 29000, MA 11100 and MA 11500. Verify electives with an academic advisor.

## Total 120 Credits Required

**Effective Fall 2016, newly admitted students or students initiating a Change of Degree or Major at either location (Hammond or Westville) will be pursuing the degree "Bachelor of Science Accounting" (BSA).**



Formerly, this degree option was known as "Bachelor of Science with a major in Business, and a concentration in Accounting" at the North Central campus.

## **Bachelor of Science in Business**

### **Business Analytics, BSB**

#### **Degree Requirements**

#### **PNW General Education Core (34 Credits Minimum)**

##### **English Composition (6 Credits)**

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

##### **Speech Communication (3 Credits)**

- COM 11400 - Fundamentals Of Speech Communication

##### **Quantitative Reasoning (3 Credits)**

- MA 15300 - College Algebra

##### **Natural Sciences (3 Credits)**

Select from the Natural Sciences Core list

##### **Technology (3 Credits)**

- ISM 10200 - Computer Utilization For Management

##### **Humanities (3 Credits)**

Select from the Humanities Core list

##### **Social Sciences (3 Credits)**

- SOC 10000 - Introductory Sociology
- or
- PSY 12000 - Elementary Psychology

##### **Additional Credits (3 Credits)**

- MA 15910 - Introduction To Calculus

##### **General Ed Elective (6 Credits)**

Select two (2) courses from the Gen Ed Core list, except FYE

##### **First-Year Experience (FYE) (1 Credit)**

- BUSM 10000 - Freshman Seminar In Business

##### **Business Core (50 Credits)**

- BUSM 10100 - Introduction To Business
- ECON 25100 - Microeconomics
- ACC 20000 - Introductory Accounting
- ISM 21100 - Principles Of Information Systems
- ECON 25200 - Macroeconomics
- PHIL 32400 - Ethics For The Professions
- ACC 20100 - Management Accounting I
- BUSM 22500 - Fundamental Managerial Statistics
- BUSM 35400 - Legal Foundations Of Business I
- OBHR 33000 - Introduction To Organizational Behavior
- MKG 22400 - Principles Of Marketing
- FIN 31000 - Financial Management
- BUSM 36000 - Production And Operations Management
- BUSM 38000 - International Business
- BUSM 32000 - Business Communication

- BUSM 45000 - Strategic Management: Capstone
- BUSM 20000 - Second Year Seminar in Business
- BUSM 30000 - Third Year Seminar In Business
- BUSM 40000 - Fourth Year Seminar In Business

### **Major Core (21 Credits)**

- BIZA 32500 - Applied Business Statistics
- CIS 25300 - Applied Database Techniques
- ISM 32000 - Advanced Spreadsheet Applications For Business
- ISM 40800 - Data Mining
- BIZA 42000 - Decision Analytics
- ISM 48600 - Project Management
- BIZA 49000 - Senior Project

### **Other Required Courses (15 Credits)**

#### **Business Electives (9 Credits)**

Any (3) College of Business course 30000 level or higher. College of Business subject codes include: ACC, BIZA, BUSM, CIS, ENTR, FIN, ISM, MKG, and OBHR.

#### **Free Electives (6 Credits)**

Any two (2) courses 10000 level or higher except for CHM 10000, GNS 29000, MA 11100, and MA 11500.

### **Total 120 Credits Required**

\*\*\* Major Course - Choose any 1 course from

- ENTR 40000 - Small Business Consulting
- ENTR 40100 - Social Entrepreneurship
- ENTR 41000 - Advanced Small Business Consulting
- ENTR 49000

## **Finance, BSB**

### **Degree Requirements**

#### **PNW General Education Core (31 Credits Minimum)**

##### **English Composition (6 Credits)**

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

##### **Speech Communication (3 Credits)**

- COM 11400 - Fundamentals Of Speech Communication

##### **Quantitative Reasoning (3 Credits)**

- MA 15300 - College Algebra

##### **Natural Sciences (3 Credits)**

Select from the Natural Sciences Core list

##### **Technology (3 Credits)**

- ISM 10200 - Computer Utilization For Management

##### **Humanities (3 Credits)**

Select from the Humanities Core list

##### **Social Sciences (3 Credits)**

- SOC 10000 - Introductory Sociology
- or
- PSY 12000 - Elementary Psychology

##### **Additional Credits (3 Credits)**

- MA 15910 - Introduction To Calculus

### **General Ed Elective (3 Credits)**

Select a course off course list, except FYE

### **First-Year Experience (FYE) (1 Credit)**

- BUSM 10000 - Freshman Seminar In Business

### **Business Core (50 Credits)**

- BUSM 10100 - Introduction To Business
- ECON 25100 - Microeconomics
- ACC 20000 - Introductory Accounting
- ISM 21100 - Principles Of Information Systems
- ECON 25200 - Macroeconomics
- PHIL 32400 - Ethics For The Professions
- ACC 20100 - Management Accounting I
- BUSM 22500 - Fundamental Managerial Statistics
- BUSM 35400 - Legal Foundations Of Business I
- OBHR 33000 - Introduction To Organizational Behavior
- MKG 22400 - Principles Of Marketing
- FIN 31000 - Financial Management
- BUSM 36000 - Production And Operations Management
- BUSM 38000 - International Business
- BUSM 32000 - Business Communication
- BUSM 45000 - Strategic Management: Capstone
- BUSM 20000 - Second Year Seminar in Business
- BUSM 30000 - Third Year Seminar In Business
- BUSM 40000 - Fourth Year Seminar In Business

### **Major Core (18 Credits)**

- ACC 35000 - Intermediate Accounting I
- FIN 44300 - Fundamentals Of Investments
- FIN 34000 - Corporate Financial Problems
- FIN 41200 - Financial Markets And Institutions
- FIN 44900 - International Financial Management
- ACC 40200 - Financial Statements Analysis

### **Other Required Courses (21 Credits)**

#### **Business Electives (9 Credits)**

Any (3) College of Business course 30000 level or higher. College of Business subject codes include: ACC, BIZA, BUSM, CIS, ENTR, FIN, ISM, MKG, and OBHR.

#### **Free Electives (6 Credits)**

Any (2) course 10000 level or higher except for CHM 10000, GNS 29000, MA 11100, and MA 11500.

#### **Finance Electives (6 Credits)**

Choose (2) from:

- FIN 44000 - Management Of Financial Institutions
- FIN 44100 - Futures And Options
- FIN 44200 - Personal Finance
- FIN 44400 - Investment Management
- FIN 44700 - Derivatives
- FIN 44800 - Real Estate Principles

## Total 120 Credits Required

### **Information Systems, BSB, Concentration: Computer Information System**

#### Degree Requirements

#### PNW General Education Core (31 Credits Minimum)

##### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

##### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

##### Quantitative Reasoning (3 Credits)

- MA 15300 - College Algebra

##### Natural Sciences (3 Credits)

Select from the Natural Sciences Core list

##### Technology (3 Credits)

- ISM 10200 - Computer Utilization For Management

##### Humanities (3 Credits)

Select from the Humanities Core list

##### Social Sciences (3 Credits)

- SOC 10000 - Introductory Sociology
- or
- PSY 12000 - Elementary Psychology

##### Additional Credits (3 Credits)

- MA 15910 - Introduction To Calculus

##### General Ed Elective (3 Credits)

Select a course off course list, except FYE

##### First-Year Experience (FYE) (1 Credit)

- BUSM 10000 - Freshman Seminar In Business

##### Business Core (50 Credits)

- BUSM 10100 - Introduction To Business
- ECON 25100 - Microeconomics
- ACC 20000 - Introductory Accounting
- ISM 21100 - Principles Of Information Systems
- ECON 25200 - Macroeconomics
- PHIL 32400 - Ethics For The Professions
- or
- BUSM 34400 - Business Ethics
- ACC 20100 - Management Accounting I
- BUSM 22500 - Fundamental Managerial Statistics
- BUSM 35400 - Legal Foundations Of Business I
- OBHR 33000 - Introduction To Organizational Behavior
- MKG 22400 - Principles Of Marketing

- FIN 31000 - Financial Management
- BUSM 36000 - Production And Operations Management
- BUSM 38000 - International Business
- BUSM 32000 - Business Communication
- BUSM 45000 - Strategic Management: Capstone
- BUSM 20000 - Second Year Seminar in Business
- BUSM 30000 - Third Year Seminar In Business
- BUSM 40000 - Fourth Year Seminar In Business

### **Major Core (36 Credits)**

- CIS 16600 - Introduction To Programming
- CIS 25300 - Applied Database Techniques
- CIS 24100 - Foundations Of Web Design And Development
- CIS 35300 - Advanced Database Methods
- CIS 26300 - Java Programming
- CIS 34100 - Advanced Web Design And Development
- ISM 30700 - System Analysis And Design
- CIS 46300 - Introduction To Mobile Programming
- ISM 48600 - Project Management
- CIS 42600 - Applications Software Development Project
- ISM 41600 - Information Systems Control And Audit
- CIS 23001 - Information Systems Infrastructure

### **Other Required Courses (3 Credits)**

#### **Free Electives (3 Credits)**

Any course 10000 level or higher except for CHM 10000, GNS 29000, and MA 11500.

### **Total 120 Credits Required**

## **Information Systems, BSB, Concentration: Management**

### **Information Systems**

#### **Degree Requirements**

#### **PNW General Education Core (31 Credits Minimum)**

##### **English Composition (6 Credits)**

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

##### **Speech Communication (3 Credits)**

- COM 11400 - Fundamentals Of Speech Communication

##### **Quantitative Reasoning (3 Credits)**

- MA 15300 - College Algebra

##### **Natural Sciences (3 Credits)**

Select from the Natural Sciences Core list

##### **Technology (3 Credits)**

- ISM 10200 - Computer Utilization For Management

##### **Humanities (3 Credits)**

Select from the Humanities Core list

##### **Social Sciences (3 Credits)**

- SOC 10000 - Introductory Sociology

or

- PSY 12000 - Elementary Psychology

### **Additional Credits (3 Credits)**

- MA 15910 - Introduction To Calculus

### **General Ed Elective (3 Credits)**

Select a course off course list, except FYE

### **First-Year Experience (FYE) (1 Credit)**

- BUSM 10000 - Freshman Seminar In Business

### **Business Core (50 Credits)**

- BUSM 10100 - Introduction To Business
- ECON 25100 - Microeconomics
- ACC 20000 - Introductory Accounting
- ISM 21100 - Principles Of Information Systems
- ECON 25200 - Macroeconomics
  
- PHIL 32400 - Ethics For The Professions
- or
- BUSM 34400 - Business Ethics
  
- ACC 20100 - Management Accounting I
- BUSM 22500 - Fundamental Managerial Statistics
- BUSM 35400 - Legal Foundations Of Business I
- OBHR 33000 - Introduction To Organizational Behavior
- MKG 22400 - Principles Of Marketing
- FIN 31000 - Financial Management
- BUSM 36000 - Production And Operations Management
- BUSM 38000 - International Business
- BUSM 32000 - Business Communication
- BUSM 45000 - Strategic Management: Capstone
- BUSM 20000 - Second Year Seminar in Business
- BUSM 30000 - Third Year Seminar In Business
- BUSM 40000 - Fourth Year Seminar In Business

### **Major Core (24 Credits)**

- CIS 25300 - Applied Database Techniques
- CIS 24100 - Foundations Of Web Design And Development
- ISM 32000 - Advanced Spreadsheet Applications For Business
- ISM 30700 - System Analysis And Design
- ISM 31800 - E-Business Strategy
- ISM 48600 - Project Management
- ISM 48700 - Knowledge And Decision Management
- ISM 48901 - Enterprise Resource Planning Implementation

### **Other Required Courses (15 Credits)**

#### **Free Electives (9 Credits)**

Any (3) courses 10000 level or higher except for CHM 10000, GNS 29000, MA 11100, and MA 11500.

#### **Electives (6 Credits)**

Select 2 courses from the list below:

#### **Major Electives**

- ISM 32500 - Logistics
- ISM 40800 - Data Mining
- ISM 41600 - Information Systems Control And Audit
- ISM 41800 - Knowledge Management And Business Intelligence
- ISM 48300 - Business Data Communications
- or CIS courses approved by the Department Head.

### **Business Analytics Major**

- BIZA 32500 - Applied Business Statistics
- BIZA 49000 - Senior Project

### **Business Elective**

Any College of Business course 30000 level or higher. College of Business subject codes include: ACC, BIZA, BUSM, CIS, ENTR, FIN, ISM, MKG, and OBHR.

## **Total 120 Credits Required**

## **Master of Accountancy**

## **Master of Accountancy, MACC**

The program effectively requires that all graduate students complete a minimum of 30 graduate credit hours.

1. The MBA program consists of 30 credit hours of Graduate courses. Students may complete the requirements of the degree in one – two years.
2. Students may start the program in either August (Fall), January (Spring), or May (Summer).
3. Courses are offered in 16-week modules. All course are offered in the evening.

## **Admission Requirements**

1. Admission requires an undergraduate degree with a major or concentration in accounting, a graduate index of 3.0/4.0 and satisfactory performance on the GMAT examination if undergraduate GPA is less than 3.20 on a 4.0 scale. Applicants may request a waiver of the GMAT requirement under special circumstances.
2. Applications from students whose undergraduate degree major is not accounting may be considered provided that they have completed a sufficient number and variety of accounting courses to satisfy the prerequisites for the master's level courses required by the program.

## **Degree Requirements**

- MGMT 50100 - Advanced Taxation
- MGMT 50300 - Advanced Accounting
- MGMT 50500 - Management Accounting II
- MGMT 50600 - Auditing
- MGMT 50900 - International Accounting
- MGMT 51500 - Fraud Investigation
- MGMT 59000 - Directed Readings In Management
- MGMT 59000 - Governmental & Non-For-Profit Accounting
- MGMT 59000 - Accounting Communication
- MGMT 59000 - Advanced Financial Reporting
- MGMT 59000 - Corporate Governance & Ethics
- Or other graduate level courses approved by the Master of Accountancy Advisor

## **Total 30 Credits Required**

## **Graduate Certificate**

## **Forensic Accounting Graduate Certificate**

1. The Certificate in Forensic Accounting is designed to prepare candidates to understand how and why occupational fraud is occurring, how it can be detected or prevented, and how allegations of fraud should be professionally investigated and resolved.

2. Students may start the program in August (Fall).
3. Courses are offered in 8- and 16-week modules. All course are offered in the evening.

## Admission Requirements

1. A bachelor's degree from an accredited college or university.
2. Completion of an introductory accounting course.

## Certificate Requirements

- MGMT 51500 - Fraud Investigation
- MGMT 51700 - Fraud Data Analysis
- MGMT 51800 - Criminology And Legal Issues
- MGMT 51900 - Advanced Fraud Investigation

## Total 12 Credits Required

### Minor

## Accounting Minor

### Course Requirements (15 Credits)

*Minimum grade of "C-" required for each course.*

#### Required Courses (12 Credits)

- ACC 35000 - Intermediate Accounting I
- ACC 35100 - Intermediate Accounting II
- ACC 40700 - Managerial/Cost Accounting
- ACC 40900 - Accounting Information Systems

#### Elective Courses (3 Credits)

**Choose One:**

- ACC 40200 - Financial Statements Analysis
- ACC 40400 - Tax Accounting

## Business Analytics Minor

### Course Requirements (15 Credits)

*Minimum grade of "C-" required for each course.*

- BUSM 22500 - Fundamental Managerial Statistics
- BIZA 32500 - Applied Business Statistics
- ISM 30800 - Database Management Analysis And Design
- ISM 32000 - Advanced Spreadsheet Applications For Business
- ISM 40800 - Data Mining

*Note: Students must complete MA 15300 and ISM 21100 to fulfill the prerequisite requirements of the courses in this Minor.*

## Finance Minor

### Course Requirements (15 Credit Hours)

*Minimum grade of "C-" required for each course.*

#### Required Courses (9 Credits)

- FIN 34000 - Corporate Financial Problems
- FIN 41200 - Financial Markets And Institutions
- FIN 44300 - Fundamentals Of Investments

#### Elective Courses (6 Credits)

**Select two (2) from the following:**



- ACC 35000 - Intermediate Accounting I
- ACC 40200 - Financial Statements Analysis
- FIN 44000 - Management Of Financial Institutions
- FIN 44200 - Personal Finance
- FIN 44400 - Investment Management
- FIN 44700 - Derivatives
- FIN 44900 - International Financial Management

## **Information Systems Minor**

### **Course Requirements (15 Credit Hours)**

*Minimum grade of "C-" required for each course.*

#### **Required Course (3 Credits)**

- CIS 20400 - Introduction To Computer-Based Systems  
or
- ISM 10200 - Computer Utilization For Management

#### **Elective Courses (12 Credits)**

An additional five (5) courses may be selected from the ISM and CIS course offerings.

## **White Lodging School of Hospitality and Tourism Management**

### **Bachelor of Science**

### **Hospitality and Tourism Management, BS**

#### **Degree Requirements**

#### **PNW General Education Core (31 Credits Minimum)**

##### **English Composition (6 Credits)**

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

##### **Speech Communication (3 Credits)**

- COM 11400 - Fundamentals Of Speech Communication

##### **Quantitative Reasoning (3 Credits)**

- STAT 13000 - Statistics And Contemporary Life

##### **Natural Sciences (6 Credits)**

- FN 30300 - Essentials Of Nutrition and any Natural Science course w/ Lab

##### **Technology (3 Credits)**

- CIS 20400 - Introduction To Computer-Based Systems

##### **Humanities (3 Credits)**

Select from the Humanities Core list

##### **Social Sciences (6 Credits)**

- SOC 10000 - Introductory Sociology
- PSY 12000 - Elementary Psychology

##### **First-Year Experience (FYE) (1 Credit)**

- HTM 10100 - Hospitality And Tourism Student Seminar

##### **Major Core (65 Credits)**

- HTM 10000 - Introduction To The Hospitality And Tourism Industry

- HTM 19100 - Sanitation And Health In Foodservice, Lodging, And Tourism
- FN 20300 - Foods Selection And Preparation
- HTM 14100 - Financial Accounting For The Service Industries
- HTM 18100 - Lodging Management
- HTM 34100 - Cost Controls In Foodservice And Lodging
- ECON 21000 - Principles Of Economics
- HTM 21200 - Organization And Management In The Hospitality And Tourism Industry
- HTM 23100 - Hospitality And Tourism Marketing
- HTM 29100 - Quantity Food Production And Service
- HTM 37100 - Introduction To Tourism
- HTM 24100 - Managerial Accounting And Financial Management In Hospitality Operations
- HTM 31100 - Procurement Management For Foodservice
- HTM 31200 - Human Resources Management For The Service Industries
- HTM 32200 - Hospitality Facilities Management
- ENGL 42000 - Business Writing
- HTM 41100 - Hospitality And Tourism Law
- HTM 49100 - Beverage Management
- HTM 49900 - Feasibility Studies And Business Development In Hospitality And Tourism
- HTM 30100 - Hospitality And Tourism Industry Practice
- HTM 49200 - Advanced Foodservice Management
- SPAN 10600 - Spanish For Business I

## Other Required Courses (33 Credits)

### HTM Electives (12 Credits)

Choose (4) from:

- HTM 30900 - Hospitality And Tourism Management Publicity And Promotion
- HTM 31400 - Franchising
- HTM 31500 - Club Management And Operations
- HTM 31600 - Casino Management
- HTM 32100 - Equipment For Restaurants, Hotels, And Institutions
- HTM 32300 - Food Service Layout And Design
- HTM 33100 - Hospitality And Tourism Sales And Service
- HTM 35200 - International Cuisine
- HTM 36100 - Managed Services For The Foodservice Industry
- HTM 37200 - Global Tourism Geography
- HTM 37500 - Sport-Related Tourism And Leisure Management
- HTM 38100 - Executive Housekeeping Management
- HTM 38300 - Resort, Cruise, And Entertainment Operations
- HTM 38500 - Educational Study Cruise And/Or Air-Land Tour (E X L)
- HTM 39000 - Undergraduate Special Problems (Beer Appreciation)
- HTM 39000 - Undergraduate Special Problems (Introduction to Baking Management)
- HTM 39000 - Undergraduate Special Problems (Special Event Planning: A Christmas Story)
- HTM 39000 - Undergraduate Special Problems (Special Event Planning: Lakeshore Air Show)
- HTM 39000 - Undergraduate Special Problems (Revenue Management)
- HTM 39100 - Specialty Food Service And Catering
- HTM 41900 - Senior Seminar In Hospitality And Tourism Management
- HTM 44200 - Fraud Examination For Hospitality Managers
- FN 10500 - Nutrition In The 21st Century

- FN 12000 - Nutrition for a Healthy Lifestyle
- FN 12100 - Vegetarian Nutrition
- FN 20800 - Nutrition in Women's Health
- FN 26000 - Child Nutrition
- FN 26100 - Nutrition For Health, Fitness, And Sports
- FN 32200 - Community Nutrition & Health Promotion Entrepreneurship
- FN 31500 - Fundamentals Of Nutrition
- FN 33000 - Diet Selection And Planning
- FN 36000 - Nutrition For The Aging
- FN 39000 - Independent Undergraduate Research
- FN 59000 - Special Problems In Nutrition

### **MA/SCI Elective (3 Credits)**

Any Math or Statistics course or any Natural Science course.

### **Social Science Elective (3 Credits)**

### **Free Electives (15 Credits)**

Any (5) elective courses

### **Total 129 Credits Required**

## **Hospitality and Tourism Management, BS, Concentration:**

### **Food and Beverage**

### **Degree Requirements**

### **PNW General Education Core (31 Credits Minimum)**

#### **English Composition (6 Credits)**

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

#### **Speech Communication (3 Credits)**

- COM 11400 - Fundamentals Of Speech Communication

#### **Quantitative Reasoning (3 Credits)**

- STAT 13000 - Statistics And Contemporary Life

#### **Natural Sciences (6 Credits)**

- FN 30300 - Essentials Of Nutrition and any Natural Science course w/ Lab

#### **Technology (3 Credits)**

- CIS 20400 - Introduction To Computer-Based Systems

#### **Humanities (3 Credits)**

Select from the Humanities Core list

#### **Social Sciences (6 Credits)**

- SOC 10000 - Introductory Sociology
- PSY 12000 - Elementary Psychology

#### **First-Year Experience (FYE) (1 Credit)**

- HTM 10100 - Hospitality And Tourism Student Seminar

### **Major Core (77 Credits)**

- HTM 10000 - Introduction To The Hospitality And Tourism Industry
- HTM 19100 - Sanitation And Health In Foodservice, Lodging, And Tourism
- FN 20300 - Foods Selection And Preparation
- HTM 35200 - International Cuisine

- HTM 14100 - Financial Accounting For The Service Industries
- HTM 18100 - Lodging Management
- HTM 39200 - Classical Cuisine
- HTM 34100 - Cost Controls In Foodservice And Lodging
- ECON 21000 - Principles Of Economics
- HTM 36000 - Introduction To Baking Management
- HTM 21200 - Organization And Management In The Hospitality And Tourism Industry
- HTM 23100 - Hospitality And Tourism Marketing
- HTM 29100 - Quantity Food Production And Service
- HTM 37100 - Introduction To Tourism
- HTM 24100 - Managerial Accounting And Financial Management In Hospitality Operations
- HTM 31100 - Procurement Management For Foodservice
- HTM 31200 - Human Resources Management For The Service Industries
- HTM 32200 - Hospitality Facilities Management
- ENGL 42000 - Business Writing
- HTM 41100 - Hospitality And Tourism Law
- HTM 49100 - Beverage Management
- HTM 49900 - Feasibility Studies And Business Development In Hospitality And Tourism
- HTM 39100 - Specialty Food Service And Catering
- HTM 39300 - Advanced Foodservice Techniques
- HTM 30100 - Hospitality And Tourism Industry Practice
- HTM 49200 - Advanced Foodservice Management
- SPAN 10600 - Spanish For Business I
- HTM 30200 - Hospitality And Tourism Industry Internship

### Other Required Courses (21 Credits)

#### Food and Beverage Elective (3 Credits)

- FN 30100 - Nutrition And The Culinary Arts
- HTM 32300 - Food Service Layout And Design
- HTM 38500 - Educational Study Cruise And/Or Air-Land Tour
- HTM 42000 - Event Management

#### MA/SCI Elective (3 Credits)

Any Math or Statistics course or any Natural Science course.

#### Social Science Elective (3 Credits)

#### Free Electives (12 Credits)

Choose (4) elective courses

### Total 129 Credits Required

## Multidisciplinary Studies, BS, Concentration: Fitness Management

### Degree Requirements

#### PNW General Education Core (30 Credits Minimum)

#### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

#### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

### Quantitative Reasoning (3 Credits)

- STAT 13000 - Statistics And Contemporary Life

### Natural Sciences (8 Credits)

- BIOL 21300 - Human Anatomy And Physiology I
- BIOL 21400 - Human Anatomy And Physiology II

### Technology (3 Credits)

- CIS 20400 - Introduction To Computer-Based Systems

### Humanities (3 Credits)

Select from the Humanities Core list

### Social Sciences (3 Credits)

- SOC 10000 - Introductory Sociology
- or
- PSY 12000 - Elementary Psychology

### First-Year Experience (FYE) (1 Credit)

- HTM 10100 - Hospitality And Tourism Student Seminar

### Major Core (83 Credits)

- HTM 10000 - Introduction To The Hospitality And Tourism Industry
- FN 26100 - Nutrition For Health, Fitness, And Sports
- CHM 11900 - General Chemistry
- HTM 23100 - Hospitality And Tourism Marketing
- FN 20300 - Foods Selection And Preparation
- FM 21900 - Issues And Problems In Health
- FN 10500 - Nutrition In The 21st Century
- FN 30300 - Essentials Of Nutrition
- PSY 12000 - Elementary Psychology
- or
- SOC 10000 - Introductory Sociology
- CDFS 21000 - Introduction to Human Development Credit Hours: 3.00
- FM 30100 - Recreation Leadership
- HTM 21200 - Organization And Management In The Hospitality And Tourism Industry
- ECON 21000 - Principles Of Economics
- FM 26800 - Physiology Of Exercise
- HTM 14100 - Financial Accounting For The Service Industries
- HTM 37100 - Introduction To Tourism
- HTM 24100 - Managerial Accounting And Financial Management In Hospitality Operations
- FM 30000 - Practicum In Health, Fitness And Nutrition
- HTM 31200 - Human Resources Management For The Service Industries
- FM 30200 - Anatomy And Kinesiology
- FM 31400 - Beginning Concepts Of Group Exercise
- FM 41000 - Evaluation, Testing And Assessment Of Exercise
- FM 47400 - Physiology Of Exercise II
- FN 12000 - Nutrition for a Healthy Lifestyle
- FN 12100 - Vegetarian Nutrition
- FN 36000 - Nutrition For The Aging

- FN 42200 - Community Nutrition And Health Promotion Entrepreneurship
- FM 30500 - Practicum In Fitness Management
- ENGL 42000 - Business Writing
- FM 31300 - Beginning Concepts Of Personal Training
- HTM 31500 - Club Management And Operations

### **Other Required Courses (7 Credits)**

#### **Individualized Wellness Strategies (4 Credits)**

(1 CR) – these courses are repeatable for credit.

May select 4 from the following:

- FM 10100 - Cardiovascular Exercise Machines
- FM 10200 - Weight Training
- FM 10300 - Walking/Jogging
- FM 10400 - Physical Fitness
- FM 10500 - Yoga
- FM 10600 - Racquetball
- FM 10700 - Basic Self-Defense
- FM 10800 - Circuit Training
- FM 11200 - Aikido
- FM 11300 - Tai Chi
- FM 11400 - Pilates
- FM 11600 - Wing Chun
- FM 11700 - Latin Ballroom Dance Partner
- FM 11701 - Latin Ballroom Dance Experience
- FM 11702 - Advanced Weight Training
- FM 11703 - Jiu Jitsu
- FM 11704 - Zumba
- FM 39000 - Trx Suspension Training
- FM 39000 - Army Physical Training

#### **Free Elective (3 Credits)**

### **Total 120 Credits Required**

### **Minor**

### **Culinary Art Minor**

#### **Course Requirements (18 Credit Hours)**

#### **Required Courses (15 Credits)**

- FN 20300 - Foods Selection And Preparation
- HTM 35200 - International Cuisine
- HTM 36000 - Introduction To Baking Management
- HTM 39100 - Specialty Food Service And Catering
- HTM 39200 - Classical Cuisine
- SERV 10100 - Service Learning/Civic Engagement - Level I

#### **Elective Course (3 Credits)**

**Choose One:**

- FN 30100 - Nutrition And The Culinary Arts
- HTM 38500 - Educational Study Cruise And/Or Air-Land Tour

## **Foods and Nutrition Minor**

### **Course Requirements (15 or 16 Credit Hours)**

#### **Required Courses (13 Credits)**

- FN 10500 - Nutrition In The 21st Century
- FN 26000 - Child Nutrition
- FN 26100 - Nutrition For Health, Fitness, And Sports
- FN 30300 - Essentials Of Nutrition
- FN 36000 - Nutrition For The Aging

#### **Elective Course (2-3 Credits)**

One (1) FN Elective Course (2.00 or 3.00 Credit Hours)

## **Hospitality Management Minor**

### **Course Requirements (22 Credit Hours)**

#### **Required Courses (22 Credits)**

- FN 20300 - Foods Selection And Preparation
- HTM 10000 - Introduction To The Hospitality And Tourism Industry
- HTM 14100 - Financial Accounting For The Service Industries
- FN 30300 - Essentials Of Nutrition
- HTM 18100 - Lodging Management
- HTM 21200 - Organization And Management In The Hospitality And Tourism Industry
- HTM 23100 - Hospitality And Tourism Marketing
- HTM 31200 - Human Resources Management For The Service Industries

## **Recreational Sports Management Minor**

### **Course Requirements (16 Credit Hours)**

#### **Required Courses (16 Credits)**

- FN 10500 - Nutrition In The 21st Century
- FN 26100 - Nutrition For Health, Fitness, And Sports
- FM 10000 - Individualized Wellness Strategies
- FM 21900 - Issues And Problems In Health
- FM 30100 - Recreation Leadership
- HTM 31500 - Club Management And Operations

## **Service Learning/Civic Engagement Minor**

### **Course Requirements (15 Credit Hours)**

#### **Required Courses (10 Credits)**

- SERV 10100 - Service Learning/Civic Engagement - Level I
- SERV 20100 - Service Learning/Civic Engagement II
- SERV 30100 - Service Learning/Civic Engagement III
- SERV 40100 - Service Learning/Civic Engagement IV

#### **Elective Courses (5 Credits)**

Five (5) credits in Service Learning

- SERV 10200 - Service Learning/Civic Engagement - Level II
- SERV 10300 - Service Learning/Civic Engagement - Level III
- SERV 20100 - Service Learning/Civic Engagement II

# College of Engineering and Sciences

## College of Engineering and Sciences

*Chris Holford, Ph.D., Interim Dean*

<http://academics.pnw.edu/engineering-sciences/>

The highly ranked College of Engineering and Sciences, led by outstanding faculty recognized for their expertise, graduates some of the most successful engineers, scientists, healthcare professionals, and educators in the mid-West. Our students receive a rigorous training that enables them to advance their careers anywhere in the world. More than twenty undergraduate and graduate programs divided among five departments prepare you to pursue excellent jobs in the highly sought after STEM fields in the high-tech, data-based 21st century.

As an undergraduate or graduate student, you will apply your classroom knowledge to a broad range of basic and applied research and projects, including statistical and computer data analysis, biological and chemical processes, smart technologies, ecology and environmental hazards, designing and building automobiles, bridges, and more.

- Our engineering departments house one of the leading internationally-recognized groups in steel production improvement. As an engineering student, you will work with multi-disciplinary teams of scientists and engineers from industry and the university.
- Students in the Department of Biological Sciences enjoy numerous opportunities to work with the faculty on individualized research projects and present findings at regional and national meetings, giving them a competitive advantage after graduation.
- Ninety percent of our Chemistry and Physics students go to graduate school or are employed in their field upon earning their degree.
- If you intend to become a doctor, dentist, veterinarian, or pharmacist, we offer a variety of pathways to prepare you for success, including concentrations and pathways for all degree options that lead to your professional school of choice.

Our graduates are actively and consistently recruited by numerous regional and national companies. Recent graduates have accepted positions at places, such as: Agdia, ArcelorMittal, Fiat Chrysler Automobiles, Ford, General Electric, General Motors, NiSource (NIPSCO), Urschel Labs, and more. Other graduates have recently gone on to graduate or professional school at: Marian University, Midwestern University, Notre Dame, Ohio State University, Purdue University, or stayed right here with us in one of the many graduate programs at Purdue Northwest. These are just a few examples of the opportunities that graduates from the College of Engineering and Sciences are prepared for.

## Accreditations

- Engineering Accreditation Commission of ABET, Inc. (EAC-ABET), 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, phone: (410) 347-7700, fax: (410) 625-2238. <http://www.abet.org>.
- American Chemical Society (ACS) 1155 Sixteenth Street NW, Washington DC 20036. <https://www.acs.org/content/acs/en/about/governance/committees/training.html>.

## Minors

Minors offered at Purdue Northwest.

### Minor

## Holistic Health and Wellness Minor

### Program Philosophical Beliefs:

The Faculty articulate a philosophy for the Holistic Health and Wellness program that is congruent with the Nursing Department's mission and philosophy, and with the mission statement of Purdue University Northwest that defines their beliefs regarding the concepts of person, environment and health along with the central concepts of holistic health and wellness: holism, wellness, healing and health promotion.

- Person, which includes individuals, families and communities, is a uniquely holistic body-mind-spirit. Each person chooses and participates in health decisions.
- Environment is an ever changing unity of systems and processes in which a person lives.
- Health is the harmony of the mind-body-spirit. it is the living of optimal well being and quality of life.



- Holism is the interrelationship of body, mind and spirit in an ever-changing environment.
- Wellness is intergrated functioning aimed towards reaching a person's highest potential.
- Healing is the return of the integrity and wholeness of a person
- Health promotion is activities and preventive measures to increase well-being and actualize the human potential.

#### **Requirements of the Minor:**

The minor in Holistic Health and Wellness consists of 16 credit hours and is based in the Nursing department at Purdue University Northwest.

Students will select a total of nine elective credit hours to fulfill the requirements of the minor. Elective courses enable the student to expand and build upon knowledge acquired in the core courses. Selection of electives permits the student to personalize the minor in a way that may be most helpful in a chosen field. Acceptance of elective courses for credit toward the minor will be reviewed by the PNW Nursing department.

### **Course Requirements (16 Credit Hours)**

#### **Required Courses (7 Credits)**

- NUR 22200 - Foundations Of Holistic Health And Wellness
- NUR 34900 - Contemporary Trends In Health Care Systems
- NUR 44700 - Capstone In Holistic Health And Wellness

#### **Elective Courses (9 Credits)**

##### **Choose Three:**

- BIOL 30600 - The Biology And Controversy Of Medical Ethics
- CHM 49000 - Selected Topics In Chemistry For Upper-Division Students
- FN 30300 - Essentials Of Nutrition
- NUR 21800 - Human Development And Health Promotion
- NUR 32510 - Eastern Energy Healing And Spirituality
- NUR 39900 - Special Topics
- NUR 44800 - Holistic Health And Wellness: Stress Management
- PHIL 11100 - Ethics
- PHIL 23000 - Religions Of The East

### **Sports Health Minor**

The Sports Health minor is intended for students who are interested in the broad field of Sports Health.

The objectives of this program are:

To provide a great number and wide variety of learning experiences in subject matter (cognitive learning) and practical skills. This objective will be accomplished through structured course work.

To provide the opportunity for students to learn up-to-date concepts, and applications in Sports Health. Thus, all courses reflect current emphasis on matters of interest and concern of elementary, secondary, college, professional, clinical, and industrial settings.

To provide the opportunity for students to become aware of the need for specialties and diversity in Sports Health settings.

Upon completion of the minor program, students will be equipped with the basic knowledge of Sports Health in general and Athletic Training, specifically. The knowledge obtained may be used by students to enhance their academic major and ultimately their career or use the information to continue their education in the field of Sports Health and/or Athletic Training.

This program has been designed to:

- Acquire a background of experience in general education including humanities, sciences, and social sciences.
- Utilize a conceptual framework and specialized skills in the field of Sports Health.
- Integrate an understanding of human development, theories pertaining to sports health, and environmental influences in certain situations.
- Demonstrate personal and professional behavior relevant to the profession.
- Develop an honor value system that is sensitive to the dignity and welfare of the human being.

- Translate professional knowledge, research, and competencies in sports health.

## Course Requirements (27 Credit Hours)

- BIOL 21300 - Human Anatomy And Physiology I
- BIOL 21400 - Human Anatomy And Physiology II
- GBH 20000 - Medical Terminology
- HST 11000 - Orientation To Sports Health
- HST 21000 - First Responder: First Aid And Emergency Care
- HST 22000 - Concepts Of Fitness
- HST 25000 - Prevention And Care Of Athletic Injuries
- HST 35000 - Biomechanics And Structural Kinesiology
- HST 36000 - Exercise Physiology
- HST 40000 - Advanced Sports Health

## Department of Biological Sciences

### Associate of Science

### Emergency Medical Services, AS

This associate degree program prepares students for careers in paramedicine. The program has two components and requires at least 3 years for completion. The academic phase of the program occurs on the Purdue University Northwest - Hammond campus and includes course work in the basic sciences and general studies. The clinical professional phase of the program is offered at an affiliated hospital (St. Anthony Medical Center, Crown Point, St. Mary's Medical Center, Hobart or Methodist Hospitals, Inc., Gary, Indiana) approved to offer the paramedic curriculum. Note: Emergency Medical Technician (EMT) training and certification must be completed prior to applying for the clinical phase

### Degree Requirements

- BIOL 21300 - Human Anatomy And Physiology I
- BIOL 21400 - Human Anatomy And Physiology II
- COM 11400 - Fundamentals Of Speech Communication
- CHM 11900 - General Chemistry
- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II
- MA 14700 - Algebra And Trigonometry For Technology
- PSY 12000 - Elementary Psychology

### Psychology Electives (6 Credits)

Select (2) Psychology electives. The following courses are recommended:

- PSY 35000 - Abnormal Psychology
- PSY 35500 - Child Abuse And Neglect
- PSY 36100 - Human Development I: Infancy And Childhood
- PSY 42800 - Drugs And Behavior
- PSY 44300 - Aggression And Violence
- PSY 53200 - Psychological Disorders Of Childhood
- PSY 53500 - Psychology Of Death And Dying

### Clinicals (28 Credits)

### Total 60 Credits Required

### Bachelor of Science

### Biological Sciences, BS

The biological sciences are undergoing an extraordinary revolution, and the plans of study are formulated to give students a broad basis for comprehending the diverse nature of this field. Biology builds upon this knowledge and attempts to understand the complex systems that ultimately give rise to biodiversity. Our curriculum is designed so that this basic biological knowledge can readily be applied to critical practical problems in health and medicine, agriculture and the management of other renewable resources, and the nature of populations and their control.

The amount of information that is currently being discovered in the biological world is daunting, and we recognize that some students may want to focus within an area of specialization. Students begin our curriculum with a four-semester biology core. These courses provide a common knowledge base for all biology majors. The sequence begins with an overview of evolutionary, environmental, and organismal concepts, and then proceeds to examine relationships between development, structure, and function as adaptational mechanisms. The third and fourth semesters are concerned with cellular organization and function followed by genetic and molecular principles so important to modern biology.

## Degree Requirements

### PNW General Education Core (30 Credits Minimum)

#### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

#### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

#### Quantitative Reasoning (3 Credits)

- MA 16031 - Calculus I For Life Sciences

#### Natural Sciences (4 Credits)

- CHM 11500 - General Chemistry

#### Technology (3 Credits)

- CIS 20400 - Introduction To Computer-Based Systems

#### Humanities (3 Credits)

Select from the Humanities Core list

#### Social Sciences (3 Credits)

Select from the Social Sciences Core list

#### Additional Credits (4 Credits)

- CHM 11600 - General Chemistry

#### First-Year Experience (FYE) (1 Credit)

- BIOL 10700 - Freshman Experience In Biological Sciences

#### Major Core (17 Credits)

- BIOL 10100 - Introductory Biology
- BIOL 10200 - Introductory Biology
- BIOL 24300 - Introductory Cell Biology
- BIOL 24400 - Genetics
- BIOL 42600 - Senior Capstone

#### Required Courses (52-53 Credits)

##### Chemistry (11 Credits)

- CHM 25500 - Organic Chemistry
- CHM 25501 - Organic Chemistry Laboratory
- CHM 25600 - Organic Chemistry
- CHM 25601 - Organic Chemistry Laboratory

Choose one course from the list below based on your study plan:

- CHM 32400 - Survey of Environmental Chemistry

### Physics (8 Credits)

- PHYS 22000 - General Physics
- PHYS 22100 - General Physics

### Mathematics, Statistics, & Computer Science (9 credits)

- MA 16032 - Calculus II For Life Sciences
- STAT 33001 - Biostatistics
- CIS 20400 - Introduction To Computer-Based Systems

### Humanities and Social Sciences (9 Credits)

### Free Electives (15-16 Credits)

### Other Required Courses (20-21 Credits)

### Additional Biological Sciences Required Courses (10-11 Credits)

- BIOL 31100 - Introduction To Evolution  
or
- BIOL 58000 - Evolution

Choose two of the following three categories, and then choose a course from each of the chosen categories. The course not chose can be used to meet the Biology Elective requirement with the exception of BIOL 21400 (not a 30000 level class).

#### Category 1:

- BIOL 21400 - Human Anatomy And Physiology II
- BIOL 30700 - Plant Physiology
- BIOL 31000 - Form And Function Of Vascular Plants
- BIOL 35700 - Introductory Animal Physiology

#### Category 2:

- BIOL 31600 - Basic Microbiology

#### Category 3:

- BIOL 33300 - Ecology

### Biological Sciences Electives (Minimum 10 Credits)

Only 30000 level or above biology courses can be used to fulfill this requirement. At least one of these courses must be a 50000 level class. BIOL 34200 and BIOL 33000 cannot be used to fulfill the biology elective requirement. Maximum 3 credits of independent studies/research/BIOL 48800 internship can be used to fulfill this requirement.

### Total 120 Credits Required

## Biological Sciences, BS, Concentration: Biotechnology

Biotechnology provides students with a strong foundation that prepares them for work in industry or further education in a graduate program. Students gain hands on experience in labs and learn how to use equipment that is ubiquitous in modern biotechnology. Many fields of biology rely on these techniques, including molecular biology, genetics, developmental biology, neurology, genetic counseling, medical technology and microbiology.

### Degree Requirements

#### PNW General Education Core (30 Credits Minimum)

#### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

#### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

### Quantitative Reasoning (3 Credits)

- MA 16031 - Calculus I For Life Sciences

### Natural Sciences (4 Credits)

- CHM 11500 - General Chemistry

### Technology (3 Credits)

- CIS 20400 - Introduction To Computer-Based Systems

### Humanities (3 Credits)

Select from the Humanities Core list

### Social Sciences (3 Credits)

Select from the Social Sciences Core list

### Additional Credits (4 Credits)

- CHM 11600 - General Chemistry

### First-Year Experience (FYE) (1 Credit)

- BIOL 10700 - Freshman Experience In Biological Sciences

### Major Core (17 Credits)

- BIOL 10100 - Introductory Biology
- BIOL 10200 - Introductory Biology
- BIOL 24300 - Introductory Cell Biology
- BIOL 24400 - Genetics
- BIOL 42600 - Senior Capstone

### Required Courses (51 Credits)

#### Chemistry (11 Credits)

- CHM 25500 - Organic Chemistry
- CHM 25501 - Organic Chemistry Laboratory
- CHM 25600 - Organic Chemistry
- CHM 25601 - Organic Chemistry Laboratory
- CHM 33300 - Principles Of Biochemistry

#### Physics (8 Credits)

- PHYS 22000 - General Physics
- PHYS 22100 - General Physics
- MA 16032 - Calculus II For Life Sciences
- STAT 33001 - Biostatistics

#### Humanities and Social Sciences (9 Credits)

Select (3) Humanities/Social Science Electives. Gen Ed requires a 3.0 credit Humanities and a 3.0 credit Social Science course. It is important that these be chosen from the approved Gen Ed course list. This degree also requires 9.0 credits of additional electives from these two subject areas that are not required to be chosen from the Gen Ed list. Some professional schools have specific Humanities and Social Sciences course requirements for admission. Please select (3) recommended courses accordingly to fulfill this requirement or choose any courses of interest.

#### Free Electives (17 Credits)

Any (5) courses from the PNW curriculum are acceptable but students must complete at least one elective course at the 30000 level or higher. ONE free elective must be a 4 credit hour course.

### Concentration Required Courses (22 Credits)

### Concentration Specific Required Courses (10 Credits)

- BIOL 30800 - Introduction To Biotechnology
- BIOL 31600 - Basic Microbiology

- BIOL 50800 - Recombinant DNA Techniques

### Biotechnology Concentration Electives (12 Credits)

Select (4) Biotechnology electives. Take minimum 6 credits from Group A and the rest can be from Group A or B. Maximum 3 credits of biotechnology related independent study, research, and internship can be used to fulfill the minimum 12 credit elective requirement.

#### Group A:

- BIOL 33300 - Ecology
- BIOL 32020 - Biology Of The Immune System
- BIOL 50700 - Principles Of Molecular Biology

#### Group B:

- BIOL 31100 - Introduction To Evolution  
or
- BIOL 58000 - Evolution
- BIOL 35700 - Introductory Animal Physiology
- BIOL 30700 - Plant Physiology
- BIOL 41800 - Drugs And Disease
- BIOL 41900 - Experimental Design
- BIOL 48800 - Biological Sciences Internship (Biotechnology Related)
- BIOL 48900 - Biological Sciences Research (Biotechnology Related)
- BIOL 51601 - Food Microbiology
- BIOL 51605 - Environmental Microbiology
- BIOL 51801 - Biology Ethical Frontiers
- BIOL 53300 - Medical Microbiology
- BIOL 54401 - Epigenetics
- BIOL 56100 - Immunology
- BIOL 59500 - Special Assignments (Biotechnology Related)  
*Examples in previous years included:*
  - The Biology of Cancer
  - Microbiomes in Health and Diseases
  - Virology
  - Independent Study Related to Biotechnology
  - Cell and Tissue Culture

### Total 120 Credits Required

## Biological Sciences, BS, Concentration: Ecology & Evolution

The Ecology & Evolution concentration prepares students for a career in a broad range of areas. After receiving a bachelor degree with the ecology & evolution option, a graduate may work as an environmental field technician for private consulting firms, academic institutions, government agencies or non-profit organizations. This program also lends itself to work as a lab technician in a variety of fields including environmental testing, basic research, ecosystem assessment, and wildlife management.

### Degree Requirements

#### PNW General Education Core (30 Credits Minimum)

#### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

#### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

### Quantitative Reasoning (3 Credits)

- MA 16031 - Calculus I For Life Sciences

### Natural Sciences (4 Credits)

- CHM 11500 - General Chemistry

### Technology (3 Credits)

- CIS 20400 - Introduction To Computer-Based Systems

### Humanities (3 Credits)

Select from the Humanities Core list

### Social Sciences (3 Credits)

Select from the Social Sciences Core list

### Additional Credits (4 Credits)

- CHM 11600 - General Chemistry

### First-Year Experience (FYE) (1 Credit)

- BIOL 10700 - Freshman Experience In Biological Sciences

### Major Core (17 Credits)

- BIOL 10100 - Introductory Biology
- BIOL 10200 - Introductory Biology
- BIOL 24300 - Introductory Cell Biology
- BIOL 24400 - Genetics
- BIOL 42600 - Senior Capstone

### Concentration Required Courses (7 Credits)

- BIOL 33300 - Ecology
- BIOL 58000 - Evolution

### Other Required Courses (51 Credits)

#### Chemistry (11 Credits)

- CHM 25500 - Organic Chemistry
- CHM 25501 - Organic Chemistry Laboratory
- CHM 25600 - Organic Chemistry
- CHM 25601 - Organic Chemistry Laboratory

Choose one course from the list below based on your study plan:

- CHM 33300 - Principles Of Biochemistry
- CHM 32400 - Survey of Environmental Chemistry
- or another Chemistry course with permission

#### Physics (8 Credits)

- PHYS 22000 - General Physics
- PHYS 22100 - General Physics

#### Mathematics, Statistics, & Computer Science (6 credits)

- MA 16032 - Calculus II For Life Sciences
- STAT 33001 - Biostatistics

#### Humanities/Social Sciences Electives (9 Credits)

Gen Ed requires a 3.0 credit Humanities and a 3.0 credit Social Science course. It is important that these be chosen from the approved Gen Ed course list. This degree also requires 9.0 credits of additional electives from these two subject areas that are not required to be chosen from the Gen Ed list. Some professional schools have specific Humanities and Social Sciences course requirements for admission. Please select (3) recommended courses accordingly

to fulfill this requirement or choose any courses of interest. (Six credit hours of foreign languages may also be used to fulfill the requirement.)

### Free Electives (17 Credits)

Any (5) courses from the PNW curriculum are acceptable, students must complete at least two elective courses at the 30000 level or higher.

### Concentration Elective Courses (15 Credits)

- Choose 9 credits from Group A, 3 credits from Group B, and an additional 3 credits from either group.
- Maximum 3 credits of independent study/research/internship/practicum can be used to fulfill the minimum 12 credit elective requirement. Additional credits from this group can be used as free electives.
- Availability of elective courses in a particular semester may change. Please consult your advisor or check the biology website for current availability of elective courses.

#### Group A

- BIOL 40500 - Conservation Biology
- or
- BIOL 48300 - Great Issues: Environmental And Conservation Biology
- BIOL 32400 - Natural History of the Smoky Mountains
- BIOL 32500 - Natural History of North West Indiana
- BIOL 42200 - Comparative Vertebrate Anatomy
- BIOL 41200 - Climate Change And The Environment
- BIOL 41300 - Aquatic Ecology
- BIOL 41400 - Invasive Species Ecology
- BIOL 44200 - Ecology Of Shallow Lakes
- BIOL 46000 - Herpetology
- BIOL 46100 - Animal Behavior or BIOL 59500 (Animal Behavior)
- BIOL 46200 - Evolution Of Human Mating Systems
- BIOL 48800 - Biological Sciences Internship
- BIOL 48900 - Biological Sciences Research
- BIOL 49500 - Special Assignments
- BIOL 51605 - Environmental Microbiology
- BIOL 58700 - Biogeography
- BIOL 58800 - Plant Ecology
- BIOL 59100 - Field Ecology
- BIOL 59700 - Sex And Evolution
- BTNY 55500 - Aquatic Botany
- BIOL 59500 - Special Assignments
- Special Assignments (Ecology Related)
- Animal Behavior
- Microbial Ecology
- Environmental Microbiology
- Ornithology
- Wetland Ecology
- Independent Study Related to Ecology

#### Group B

- BIOL 30700 - Plant Physiology
- or
- BIOL 31000 - Form And Function Of Vascular Plants



- BIOL 31600 - Basic Microbiology
- BIOL 35700 - Introductory Animal Physiology
- BIOL 49200 - Mycology
- BIOL 50700 - Principles Of Molecular Biology
- BIOL 50800 - Recombinant DNA Techniques
- BIOL 51801 - Biology Ethical Frontiers
- BIOL 54401 - Epigenetics

## **Total 120 Credits Required**

## **Biological Sciences, BS, Concentration: Health Sciences**

Health Sciences is intended for students who are interested in applying to a health science related professional program. Students can choose the health science concentration and the pre-professional program of their choice, including pre-dentistry, pre-occupational therapy, pre-medicine, pre-physician assistant, pre-optometry, as well as a non-degree pre-pharmacy program to prepare students for application to College of Pharmacy Doctor of Pharmacy (Pharm. D.) programs.

## **Degree Requirements**

### **PNW General Education Core (30 Credits Minimum)**

#### **English Composition (6 Credits)**

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

#### **Speech Communication (3 Credits)**

- COM 11400 - Fundamentals Of Speech Communication

#### **Quantitative Reasoning (3 Credits)**

- MA 16031 - Calculus I For Life Sciences
- or
- MA 16300 - Integrated Calculus Analysis Geometry I

#### **Natural Sciences (8 Credits)**

- BIOL 10100 - Introductory Biology
- BIOL 10200 - Introductory Biology

#### **Technology (3 Credits)**

- CIS 20400 - Introduction To Computer-Based Systems

#### **Humanities (3 Credits)**

- PHIL 11100 - Ethics

#### **Social Sciences (3 Credits)**

- PSY 12000 - Elementary Psychology

#### **First-Year Experience (FYE) (1 Credit)**

- BIOL 10700 - Freshman Experience In Biological Sciences

#### **Major Core (63 Credits)**

- CHM 11500 - General Chemistry
- CHM 11600 - General Chemistry
- MA 16032 - Calculus II For Life Sciences
- BIOL 24400 - Genetics
- CHM 25500 - Organic Chemistry
- CHM 25501 - Organic Chemistry Laboratory
- BIOL 24300 - Introductory Cell Biology
- STAT 33001 - Biostatistics

- CHM 25600 - Organic Chemistry
- CHM 25601 - Organic Chemistry Laboratory
- SOC 10000 - Introductory Sociology
- BIOL 21300 - Human Anatomy And Physiology I
- PHYS 22000 - General Physics
- BIOL 31600 - Basic Microbiology
- BIOL 21400 - Human Anatomy And Physiology II
- PHYS 22100 - General Physics
- BIOL 32020 - Biology Of The Immune System
- CHM 33300 - Principles Of Biochemistry
- FN 30300 - Essentials Of Nutrition
- BIOL 42600 - Senior Capstone

## Other Required Courses (27 Credits)

### Health Sciences Electives (9 Credits)

Maximum 3 credits of Health Sciences related independent study/research/ internship can be used to fulfill the minimum 12 credit elective requirement. BIOL 34200 and BIOL 33000 cannot be used to fulfill this requirement.

Choose 3:

- BIOL 41800 - Drugs And Disease
- BIOL 48800 - Biological Sciences Internship (Health Sciences Related) (EXL)
- BIOL 48900 - Biological Sciences Research (Health Sciences Related) (EXL)
- BIOL 49500 - Special Assignments (Health Sciences Related)
- BIOL 50700 - Principles Of Molecular Biology
- BIOL 50800 - Recombinant DNA Techniques
- BIOL 51601 - Food Microbiology
- BIOL 51605 - Environmental Microbiology
- BIOL 51801 - Biology Ethical Frontiers
- BIOL 52500 - Principles Of Neurobiology
- BIOL 53300 - Medical Microbiology
- BIOL 54401 - Epigenetics
- BIOL 56100 - Immunology
- BIOL 56600 - Developmental Biology
- BIOL 59500 - Special Assignments (Health Sciences Related)
- Advanced Cell Biology
- Microbiota in Health & Disease
- Immune Disorder
- Biology of Cancer Cells
- Bioinformatics
- Cell and Tissue Culture
- Medical Genetics
- Virology

### Humanities/Social Sciences Electives (6 Credits)

Select (2) Humanities/Social Sciences Electives. Gen Ed requires a 3.0 credit Humanities and a 3.0 credit Social Science course. It is important that these be chosen from the approved Gen Ed course list. This degree also requires 9.0 credits of additional electives from these two subject areas that are not required to be chosen from the Gen Ed list. Some professional schools have specific Humanities and Social Sciences course requirements for admission. Please select (2) recommended courses accordingly to fulfill this requirement or choose any courses of interest. Humanities Elective: Department of Biological Sciences accepts Humanity Elective courses with the following course subject codes: AD, COM, ENGL, ETHN, FLL, HIST, LAS, MUS, PHIL, WOST, and THTR. (Six credit hours of foreign

languages may also be used to fulfill the requirement.) Social Sciences Elective: CDFS 21000 and PSY 35000 are recommended. The Department accepts Social Sciences Elective courses with the following subject code: ANTH, BHS, CDFS, COM, ECON, MGMT, POL, PSY, SOC, & WOST.

### **Free Electives (12 Credits)**

Any (4) courses from the PNW curriculum are acceptable, students must complete at least two elective courses at the 30000 level or higher.

## **Total 120 Credits Required**

# **Biological Sciences, BS, Concentration: Microbiology & Immunology**

This program teaches students the essential techniques and knowledge necessary to contribute to advances in molecular genetics, bioinformatics, and biotechnology.

## **Degree Requirements**

### **PNW General Education Core (30 Credits Minimum)**

#### **English Composition (6 Credits)**

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

#### **Speech Communication (3 Credits)**

- COM 11400 - Fundamentals Of Speech Communication

#### **Quantitative Reasoning (3 Credits)**

- MA 16031 - Calculus I For Life Sciences

#### **Natural Sciences (4 Credits)**

- CHM 11500 - General Chemistry

#### **Technology (3 Credits)**

- CIS 20400 - Introduction To Computer-Based Systems

#### **Humanities (3 Credits)**

Select from the Humanities Core list

#### **Social Sciences (3 Credits)**

Select from the Social Sciences Core list

#### **Additional Credits (4 Credits)**

- CHM 11600 - General Chemistry

#### **First-Year Experience (FYE) (1 Credit)**

- BIOL 10700 - Freshman Experience In Biological Sciences

### **Major Core (49 Credits)**

- BIOL 10100 - Introductory Biology
- BIOL 10200 - Introductory Biology
- BIOL 24300 - Introductory Cell Biology
- BIOL 24400 - Genetics
- BIOL 42600 - Senior Capstone

## **Required Courses (51 Credits)**

### **Chemistry (11 Credits)**

- CHM 25500 - Organic Chemistry
- CHM 25501 - Organic Chemistry Laboratory
- CHM 25600 - Organic Chemistry
- CHM 25601 - Organic Chemistry Laboratory

- CHM 33300 - Principles Of Biochemistry

#### **Physics (8 Credits)**

- PHYS 22000 - General Physics
- PHYS 22100 - General Physics

#### **Mathematics, Statistics, and Computer Science (6 Credits)**

- MA 16032 - Calculus II For Life Sciences
- STAT 33001 - Biostatistics

#### **Humanities and Social Sciences (9 Credits)**

Select (3) Humanities/Social Science Electives. Gen Ed requires a 3.0 credit Humanities and a 3.0 credit Social Science course. It is important that these be chosen from the approved Gen Ed course list. This degree also requires 9.0 credits of additional electives from these two subject areas that are not required to be chosen from the Gen Ed list. Some professional schools have specific Humanities and Social Sciences course requirements for admission. Please select (3) recommended courses accordingly to fulfill this requirement or choose any courses of interest.

#### **Free Electives (17 Credits)**

Any (5) courses from the PNW curriculum are acceptable but students must complete at least one elective course at the 30000 level or higher. ONE free elective must be a 4 credit hour course.

### **Concentration Required Courses (22 Credits)**

#### **Concentration Specific Required Courses (7 Credits)**

- BIOL 31600 - Basic Microbiology
- BIOL 32020 - Biology Of The Immune System

#### **Microbiology and Immunology Concentration Electives (15 Credits)**

- Take minimum 6 credits from Group A and the rest can be from Group A or B.
- Take minimum 3 credits of any biology courses above 30000 level excluding BIOL 33900 and BIOL 34200. These courses can be used as free elective.
- Maximum 3 credits of microbiology or immunology related research/ internship/ readings can be used to fulfill the 15 credit elective requirement. Additional credits can be used as free electives.

#### **Group A:**

- BIOL 49200 - Mycology
- BIOL 51601 - Food Microbiology
- BIOL 51605 - Environmental Microbiology
- BIOL 53300 - Medical Microbiology
- BIOL 49500 - Special Assignments  
or
- BIOL 59500 - Special Assignments (Microbiology or Immunology Related)  
e.g. Virology, Immune Disorders, Microbiota in Health and Disease, Advanced Immunology, Microbial Ecology

#### **Group B:**

- BIOL 48800 - Biological Sciences Internship (Microbiology or Immunology)
- BIOL 48900 - Biological Sciences Research (Microbiology or Immunology)
- BIOL 50700 - Principles Of Molecular Biology
- BIOL 50800 - Recombinant DNA Techniques
- BIOL 49500 - Special Assignments  
or

- BIOL 59500 - Special Assignments  
e.g. Bioinformatics, Cell and Tissue Culture, Drugs and Disease, Independent Studies Related to Microbiology or Immunology

## **Total 120 Credits Required**

### **Health Studies, BS**

The health studies program provides a number of paths to students who wish to work in a health-related career but do not want to pursue nursing. Graduates are well prepared to immediately enter non-clinical occupations within the health care sector, and/or to pursue master's degrees in health and human services or doctoral level training in health services research, public health, health education and more. Additionally, for students who already hold an associate degree in a health-related field, this program has been designed with an accessible two-year degree completion track, allowing graduates to quickly earn their bachelor's and move into management and leadership roles within the industry.

### **Degree Requirements**

#### **PNW General Education Core (30-31 Credits Minimum)**

##### **English Composition (6 Credits)**

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

##### **Speech Communication (3 Credits)**

- COM 11400 - Fundamentals Of Speech Communication

##### **Quantitative Reasoning (3 Credits)**

- MA 15300 - College Algebra or above

##### **Natural Sciences (3-4 Credits)**

- CHM 11500 - General Chemistry  
or
- CHM 11900 - General Chemistry

##### **Technology (3 Credits)**

- HST 35300 - Health Care Informatics

##### **Humanities (3 Credits)**

- PHIL 11100 - Ethics

##### **Social Sciences (6 Credits)**

- SOC 10000 - Introductory Sociology
- PSY 12000 - Elementary Psychology

##### **First-Year Experience (FYE) (3 Credits)**

- GS 19100 - First-Year Experience I

##### **Major Core (36 Credits)**

- HST 20000 - Medical Terminology
- HST 34900 - Contemporary Trends In Health Care Systems
- COM 35400 - Introduction To Health Communication
- HST 35800 - Cultural Diversity In Health And Illness
- PSY 25100 - Health Psychology
- BIOL 22700 - Fundamentals Of Human Pathology
- HST 30300 - Principles Of Health Insurance
- PCTX 20100 - Introductory Pharmacology
- HST 33000 - Human Sexuality
- HST 21800 - Human Development And Health Promotion
- OBHR 42700 - Occupational Safety And Health

- HST 44700 - Health Studies Capstone

### Other Required Courses (9 Credits)

#### Restricted Electives (9 Credits)

- HST 31300 - Essentials of Nutrition
- ANSC 22100 - Principles Of Animal Nutrition
- PSY 20100 - Introduction To Statistics In Psychology
- SOC 38200 - Introduction To Statistics In Sociology
- STAT 30100 - Elementary Statistical Methods
- STAT 31000 - Health Care Statistics
- HST 35500 - Thanatology
- HST 37800 - Aging In A Modern Society
- PSY 36700 - Adult Development And Aging

### Secondary Area of Study (44-45 Credits)

Students will take an additional 44-45 credits in a track of interest approved by their department.

### Total 120 Credits Required

## Medical Laboratory Science, BS

(Formerly, Medical Technology)

### Degree Requirements

#### PNW General Education Core (30 Credits Minimum)

##### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

##### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

##### Quantitative Reasoning (3 Credits)

- MA 16031 - Calculus I For Life Sciences

##### Natural Sciences (8 Credits)

- BIOL 10100 - Introductory Biology
- BIOL 10200 - Introductory Biology

##### Technology (3 Credits)

- CIS 20400 - Introduction To Computer-Based Systems

##### Humanities (3 Credits)

Select from the Humanities Core list

##### Social Sciences (3 Credits)

Select from the Social Sciences Core list

##### First-Year Experience (FYE) (1 Credit)

- BIOL 10700 - Freshman Experience In Biological Sciences

### Major Core (36 Credits)

- CHM 11500 - General Chemistry
- CHM 11600 - General Chemistry
- MA 16032 - Calculus II For Life Sciences
- BIOL 31600 - Basic Microbiology
- CHM 25500 - Organic Chemistry
- CHM 25501 - Organic Chemistry Laboratory

- BIOL 24300 - Introductory Cell Biology
- STAT 33001 - Biostatistics
- CHM 25600 - Organic Chemistry
- CHM 25601 - Organic Chemistry Laboratory
- BIOL 24400 - Genetics
- PHYS 22000 - General Physics
- PHYS 22100 - General Physics
- CHM 33300 - Principles Of Biochemistry
- BIOL 56100 - Immunology
- BIOL 42600 - Senior Capstone
- BIOL 34200 - Biological Science Practicum

## Other Required Courses (41 Credits)

### Biology Elective (6 Credits)

Biology elective courses for Medical Technology majors range from 3 to 5 credits. Choose (2) courses from the following:

- BIOL 35700 - Introductory Animal Physiology - may be replaced by BIOL 21400. However, BIOL 21300, a prerequisite of BIOL 21400, is not counted as a biology elective to meet this requirement.
- BIOL 41800 - Drugs And Disease
- BIOL 50700 - Principles Of Molecular Biology
- BIOL 50800 - Recombinant DNA Techniques
- BIOL 51601 - Food Microbiology
- BIOL 53300 - Medical Microbiology
- BIOL 59500 - Special Assignments - Cell and Tissue Culture
- BIOL 59500 - Special Assignments - Virology
- or courses approved by the department.

### Clinical Training (32 Credits)

Two semesters of Clinical Training are completed in one of the affiliated hospitals - St. Margaret Mercy Health Care Centers, North Campus (Hammond, IN), OSF Saint Francis Medical Center (Peoria, IL), or Hines VA Hospital (Hines, IL). Students must be eligible to work legally in US to participate in clinical training at the affiliated hospitals. For acceptance into a clinical program: overall 2.5 GPA and a minimum of 2.5 GPA in the sciences. Completion of prerequisite courses at Purdue University Northwest does not guarantee admission to an affiliated hospital program. Consult your advisor for application procedure.

### Humanities or Social Science Elective (3 Credits)

Department of Biological Sciences accepts Humanity Elective courses with the following course subject codes: AD, COM, ENGL, ETHN, FLL, HIST, LAS, MUS, PHIL, WOST, and THTR. The Department accepts Social Sciences Elective courses with the following subject codes: ANTH, BHS, CDFS, COM, ECON, MGMT, POL, PSY, SOC, & WOST.

## Total 120 Credits Required

## Master of Science

### Biology, MS

The biological sciences department offers a MS in Biology with both Thesis and Non-Thesis Options. Courses are available in biotechnology, molecular and cellular biology, microbiology, human biology, and ecology. Graduate level elective courses are offered in the Fall, Spring, and Summer semesters, making it possible to graduate with a non-thesis option in just three semesters. A diverse course schedule accommodates both full-time and part-time students. Our MS degree program provides an exceptional opportunity for professional development as well as a bridge to doctoral or health professional programs.

## Degree Requirements and Plan of Study

A plan of study should be submitted to the Graduate School shortly after acceptance into the program. A Graduate Advisory Committee will work closely with the student to design a program suited to the student's needs.

## **Non-Thesis Option**

Twenty-nine credits in formal courses and special assignments (independent study, research and reading) and one credit in seminar. The special assignment credits (independent study, research and reading) cannot exceed six; and the reading credits cannot exceed three. Of the total of thirty credits, twenty-one credits must in the primary area of biology at 50000 and 60000 levels and 9 credits in supporting areas. The supporting areas include biology (outside of the primary area), statistics, computer science, mathematics, education, chemistry, and physics. For example, students interested in biology teaching would choose education courses for the supporting area. Up to six credits can be taken from 40000-level formal courses as a part of the supporting area requirement. Students exercising this option must pass a written comprehensive exam for the degree.

## **Thesis Option**

Fifteen credits in formal courses, one credit in seminar, and up to 14 credits in thesis research. Up to three credits of thesis research can be substituted by special assignment (independent study, research and reading). Of the total of thirty credits, twenty-one credits must in the primary area of biology at 50000 and 60000 levels and nine credits in supporting areas. The supporting areas include biology (outside of the primary area), statistics, computer science, mathematics, chemistry, and physics. Up to six credits can be taken from 40000-level formal courses as a part of the supporting area requirement. Students exercising this option must submit a formal research proposal, conduct the research, write a thesis, and pass an oral defense before a faculty committee.

## **Required Cumulative Index**

GPA of 3.0 or higher. A grade of "B-" or better is required in all courses in the primary area. The degree must be completed in 10 semesters within 5 years.

## **Transfer of Credit**

A maximum of 9 credits taken from other accredited institutions completed within 10 years prior to completion of degree program may be accepted for supporting area. Only credit hours associated with graduate courses for which grades of B- or better were obtained will be eligible for transfer.

## **Total 30 Credits Required**

## **Combined**

## **Biological Sciences, BS/MS**

Students graduating from this combined program may receive both the Bachelor of Science and Master of Science degrees in Biological Sciences in five years, as compared to the six years needed to complete the degrees separately. This is accomplished by offering a supervised and seamless transition from the Bachelor of Science curriculum to the Master of Science curriculum that is designed to better enable our graduates to prepare for competitive positions in today's job market and/or admission to doctoral level graduate or professional schools.

## **Degree Requirements**

Students may apply for admission to the program in their third year and will be carefully evaluated to ensure that they meet all university graduation requirements, including the completion of at least 32 credit hours at the 30000-level or above, for a Bachelor of Science degree. The Bachelor of Science/Master of Science combined curriculum consists of all required courses for the Bachelor of Science in Biological Sciences, including the biology core courses (18 credits), biology concentration required courses (7-8 credits), biology electives (a minimum of 12-14 credits of 30000 level or above), as well as all of the current graduate course requirements of the traditional Master's program.

The requirements for admission to the combined program are more stringent than the admission standards for the traditional Master of Science program. Students are required to maintain a minimum 3.25 GPA for the first 80 credit hours of course work and a grade of B- or higher in all biology basic core courses in the plan of study, in order to be conditionally admitted. Final admission to the graduate program requires that the student has a minimum 3.25 overall GPA, a minimum 3.25 GPA in all biology basic core courses, and receives a B- or higher grade in each of the graduate courses taken during his/her senior year. However, the application requirement of the traditional Master of Science program to take the GRE is waived.



The total credit hours required for this combined degree program will be 141 for those students awarded both Bachelor of Science and Master of Science degrees. The traditional Bachelor of Science in Biological Sciences requires 120 hours and the Master of Science in Biological Sciences requires 30 hours, for a total of 150 hours. The combined program allows an overlap of 9 credit hours, thereby reducing the number of required hours to 141 and making it possible for qualified students to complete both degrees in five years. The graduate portion of the combined program offers both thesis and non-thesis options. The combined program allows students to receive the Bachelor of Science degree first upon completion of the undergraduate curriculum and the Master of Science degree later upon completion of the graduate plan of study. Students can choose to leave the combined program during the graduate portion of their study and still be eligible to receive the Bachelor of Science degree.

## **Total 141 Credits Required**

### **Graduate Certificate**

### **Biotechnology Graduate Certificate**

This post-baccalaureate Biotechnology Certificate provides students theoretical as well as laboratory training in molecular biology, genetic engineering, and related technologies which can be applied to a variety of biological fields. The certificate is awarded after successful completion of 6 credits of required courses and a minimum 10 credits of elective courses related to biotechnology. This program offers exceptional opportunities for individuals with a BS degree in a biological science to expand their career opportunities. Courses taken to fulfill the certificate requirements may also be applied toward the MS degree in Biology.

### **Plan of Study**

A Plan of Study for the Graduate Biotechnology Certificate Program (GS Form 6) must be completed and approved by the Advisory Committee and the Graduate Coordinator one semester prior to the completion of the certificate program.

### **Certificate Requirements**

#### **Required Courses (6 Credits)**

- BIOL 50700 - Principles Of Molecular Biology
- BIOL 50800 - Recombinant DNA Techniques

#### **Elective Courses (10 Credits Minimum)**

- BIOL 52500 - Principles Of Neurobiology
- BIOL 53300 - Medical Microbiology  
and
- BIOL 53400 - Laboratory In Medical Microbiology
- BIOL 56100 - Immunology
- BIOL 56600 - Developmental Biology
- BIOL 59500 - Special Assignments – Biotechnology related topics include but not limited to: Bioinformatics  
- Credits Hours: 3.00 Environmental Microbiology - Credits Hours: 3.00 Food Microbiology - Credits Hours:  
5.00 Research - Credits Hours: variable

## **Total 16 Credits Required**

### **Minor**

### **Biology Minor**

- A minimum of three (3) credit hours must be at or above the 30000 level
- At least one-half of these courses must be taken at PNW
- A 2.0 or higher GPA is required in courses used to complete this minor

### **Course Requirements (Min. 19 Credit Hours)**

#### **Required Courses (12 Credits)**

- BIOL 10100 - Introductory Biology

- BIOL 10200 - Introductory Biology
- BIOL 21400 - Human Anatomy And Physiology II
- BIOL 24300 - Introductory Cell Biology
- BIOL 24400 - Genetics
- BIOL 31600 - Basic Microbiology
- BIOL 33300 - Ecology
- BIOL 35700 - Introductory Animal Physiology (*Not open to students with BIOL 21300 or 21400*)

### Elective Courses (Min. 7 Credits)

Choose any biology courses including BIOL 21300, BIOL 21400, BIOL 24300, BIOL 24400, BIOL 31600, BIOL 33300, BIOL 35700 (not open to students who take BIOL 21300 and 21400)

## Biotechnology Minor

The Biotechnology minor is available to non-biology majors who wish to gain basic knowledge and skills in this field.

### Course Requirements (23 Credit Hours)

#### Required Courses (19 Credits)

- BIOL 10100 - Introductory Biology
- CHM 11500 - General Chemistry
- CHM 11600 - General Chemistry
- BIOL 24400 - Genetics \*
- BIOL 50800 - Recombinant DNA Techniques

#### Elective Courses (4 Credits)

Choose one (1) from the following courses:

- BIOL 24300 - Introductory Cell Biology \*
- BIOL 31600 - Basic Microbiology

\*BIOL 10200 prerequisite, which is necessary for majors, will be waived for the minor

## Environmental Science Minor

Environmental Science is an interdisciplinary study that uses information and knowledge from life sciences (such as biology), physical sciences (e.g., chemistry, geology, and physics), and social sciences (e.g., economics, politics, and ethics) to learn how the Earth's environment works, how our environment affect us, how we affect our environment, and how to deal with the environmental challenges we face. Although the Program is housed in the School of Engineering, Mathematics and Science, it is open to all Purdue Northwest students. Any Purdue Northwest student may become an environmental science minor by submitting a completed Student Curriculum Update/Change form (indicating the minor code KSE) to the Registrar. The Program aims to provide students with opportunities for gaining (1) a knowledge of the natural environment and how it is influenced by human society along with critical thinking skills, (2) exposure to modern and traditional technology in environmental subjects, and (3) "real world" experience through an internship or capstone project.

The Program's curriculum consists of 18 credits (6 credits in core courses and 12 credits in elective courses) as listed below. A majority of the 18 credits can be fulfilled by the courses that are taken for general education requirements, the student's major requirements, and elective courses. Therefore, it is possible to complete the Environmental Science Minor curriculum with no or very few additional courses beyond the graduation requirement of the student's major.

### Course Requirements (18 Credit Hours)

#### Required Courses (6 Credits)

- SCI 20200 - Environmental Science
- SCI 49100 - Environmental Science Internship  
or Senior Capstone/Research project with environmental subject in the student's major (3 credits)

#### Elective Courses (12 Credits)

Must include a minimum of six (6) credits outside of student's major.

- BIOL 21000 - Field Biology
- BIOL 33300 - Ecology
- BIOL 40500 - Conservation Biology
- BIOL 41200 - Climate Change And The Environment
- BIOL 41300 - Aquatic Ecology
- BIOL 41400 - Invasive Species Ecology
- BIOL 49500 - Special Assignments
- BIOL 50800 - Recombinant DNA Techniques
- BIOL 58700 - Biogeography
- BIOL 58800 - Plant Ecology
- BIOL 59100 - Field Ecology
- BIOL 59500 - Special Assignments
- CE 20100 - Surveying And GIS
- CE 35400 - Introduction To Environmental Engineering
- CHM 32400 - Survey of Environmental Chemistry
- EAS 22000 - Survey Of Physical Geography
- EAS 22200 - Weather Studies
- EAS 22300 - Ocean Studies
- ECON 31100 - Environmental Economics
- POL 22300 - Introduction To Environmental Policy
- POL 52300 - Environmental Politics And Public Policy
- SCI 10300 - Survey Of The Biological World
- SCI 10400 - Introduction To Environmental Biology
- SCI 13100 - Science And Environmental Issues
- SCI 31500 - Environmental Science For Elementary Education
- Conservation Biology (3 Credits)
- Environmental Microbiology (3-4 Credits)
- Wetland Ecology (3 Credits)
- Any course on an environmental subject upon approval of the coordinator

*Some courses subject to prerequisite requirements.*

## **Department of Chemistry and Physics**

### **Bachelor of Science**

### **Physical Sciences, BS**

General Physical Sciences trains students through a multi-disciplinary approach to solve complex problems that require knowledge and techniques from a variety of disciplines.

### **Degree Requirements**

**PNW General Education Core (32 Credits Minimum)**

**English Composition (6 Credits)**

Any General Education English Composition

**Speech Communication (3 Credits)**

Any General Education Speech Communication

**Quantitative Reasoning (5 Credits)**

- MA 16300 - Integrated Calculus Analysis Geometry I
- or

- MA 16031 - Calculus I For Life Sciences

### Natural Sciences (8 Credits)

- CHM 11500 - General Chemistry
- CHM 11600 - General Chemistry

### Technology (3 Credits)

Select from the Technology Core list

### Humanities (3 Credits)

Select from the Humanities Core list

### Social Sciences (3 Credits)

Select from the Social Sciences Core list

### First-Year Experience (FYE) (1 Credit)

- CHM 19400 - Freshman Chemistry Orientation

### Major Core (22 Credits)

**Note:** Courses with (e) at the end of their title meet the Experiential Learning requirement of the major.

- MA 16400 - Integrated Calculus Analysis Geometry II
- PHYS 15200 - Mechanics
- PHYS 25100 - Heat, Electricity And Optics
- BIOL 10100 - Introductory Biology
- CHM 29400 - Sophomore Chemistry Seminar
- CHM 49800 - Research In Chemistry (2) (e)
- CHM 49400 - Junior-Senior Chemistry Seminar

### Other Required Courses (66 Credits)

#### Free Electives (30 Credits)

Select (10) free electives.

#### Departmental Electives (21 Credits)

(A minimum of 7 credit hours must be at the 30000 level or above.) ASTR (any course); CHM (any course 20000 or higher); EAS (any course); FIS (any course); PHYS

(any course 20000 or higher); SCI, any course from the following:

- SCI 10601 - Food Chemistry
- SCI 12200 - Origin Of The Universe
- SCI 13100 - Science And Environmental Issues
- SCI 14000 - Introduction To Forensic Science
- SCI 15000 - Brewing Science
- SCI 20200 - Environmental Science
- SCI 22000 - Health And Safety

#### CES Electives (12 Credits)

Select (4) CES electives: ASTR (any course); BIOL (any course excluding BIOL 10008, 10010, and BIOL 10700); CHM (any course 20000 or higher); CE (any course); CS (any course excluding CS 10000); EAS (any course); ECE (any course); ENGR (any course excluding 11000, ENGR 18600); FIS (any course); MSE (any course); MA (any course 20000 or higher excluding MA 23700, MA 23800, and MA 23900); ME (any course); PHYS (any course 20000 or higher); STAT (any course 20000 or higher); and SCI, any course from the following:

- SCI 10601 - Food Chemistry
- SCI 12200 - Origin Of The Universe
- SCI 13100 - Science And Environmental Issues
- SCI 14000 - Introduction To Forensic Science
- SCI 15000 - Brewing Science
- SCI 20200 - Environmental Science

- SCI 22000 - Health And Safety

### General Education Elective (3 Credits)

### Total 120 Credits Required

Students who choose to take MA 16031, MA 16032, PHYS 22000, and PHYS 22100 will need to take an additional five (5) credits in free electives to meet the 120 credit hour requirement.

## Physical Sciences, BS, Concentration: Environmental Science

Provides the chemical and physical training needed for students to work in environmental monitoring and remediation, global policy, or meteorology and oceanography.

### Degree Requirements

#### PNW General Education Core (32 Credits Minimum)

##### English Composition (6 Credits)

Any General Education English Composition

##### Speech Communication (3 Credits)

Any General Education Speech Communication

##### Quantitative Reasoning (3 Credits)

- MA 16031 - Calculus I For Life Sciences
- or
- MA 16300 - Integrated Calculus Analysis Geometry I

##### Natural Sciences (8 Credits)

- CHM 11500 - General Chemistry
- CHM 11600 - General Chemistry

##### Technology (3 Credits)

Select from the Technology Core list

##### Humanities (3 Credits)

Select from the Humanities Core list

##### Social Sciences (3 Credits)

Select from the Social Sciences Core list

##### Additional Credits (2 Credits)

Any Gen Ed approved course

##### First-Year Experience (FYE) (1 Credit)

- CHM 19400 - Freshman Chemistry Orientation

### Major Core (73 Credits)

**Note:** Courses with (e) at the end of their title meet the Experiential Learning requirement of the major.

- SCI 13100 - Science And Environmental Issues
- EAS 11000 - Survey Of Geology
- EAS 22000 - Survey Of Physical Geography
- ECON 21000 - Principles Of Economics
- SCI 20200 - Environmental Science
- MA 16032 - Calculus II For Life Sciences
- or
- MA 16400 - Integrated Calculus Analysis Geometry II
- BIOL 10100 - Introductory Biology
- CHM 26505 - Organic Chemistry
- CHM 26300 - Organic Chemistry Laboratory

- PHYS 22000 - General Physics
- SCI 22000 - Health And Safety
- CHM 29400 - Sophomore Chemistry Seminar
- CHM 26605 - Organic Chemistry
- CHM 26400 - Organic Chemistry Laboratory
- PHYS 22100 - General Physics
- BIOL 10200 - Introductory Biology
- CHM 32100 - Analytical Chemistry I
- CHM 32400 - Survey of Environmental Chemistry
- CHM 42400 - Analytical Chemistry II
- BIOL 33300 - Ecology
- STAT 30100 - Elementary Statistical Methods
- ECON 31100 - Environmental Economics
- CHM 49800 - Research In Chemistry (2) (e)
- BIOL 31600 - Basic Microbiology
- CHM 49400 - Junior-Senior Chemistry Seminar

### Other Required Courses (15 Credits)

### Restricted Electives (12 Credits)

Choose (4) from:

- CHM 33300 - Principles Of Biochemistry (see note 1 regarding prerequisites)
- BIOL 40500 - Conservation Biology
- BIOL 41300 - Aquatic Ecology
- BIOL 41400 - Invasive Species Ecology
- EAS 22200 - Weather Studies
- EAS 22300 - Ocean Studies
- ENGL 22000 - Technical Report Writing
- POL 22100 - Introduction To Science And Government
- POL 22300 - Introduction To Environmental Policy
- POL 30500 - Technology And Society
- Additional courses may be used with advisor permission.

### Free Elective (3 Credits)

### Total 120 Credits Required

## Physical Sciences, BS, Concentration: Forensic Science

Students are taught how to analyze crime scenes, perform ballistic and fingerprint comparisons, and learn how to maintain a proper chain of evidence and testify in a courtroom, in order to support modern criminal investigations.

### Degree Requirements

#### PNW General Education Core (33 Credits Minimum)

#### English Composition (6 Credits)

Any General Education English Composition

#### Speech Communication (3 Credits)

Any General Education Speech Communication

#### Quantitative Reasoning (3 Credits)

- MA 16300 - Integrated Calculus Analysis Geometry I
- or
- MA 16031 - Calculus I For Life Sciences

### Natural Sciences (8 Credits)

- CHM 11500 - General Chemistry
- CHM 11600 - General Chemistry

### Technology (3 Credits)

Select from the Technology Core list

### Humanities (3 Credits)

- PHIL 11100 - Ethics

### Social Sciences (3 Credits)

- PSY 12000 - Elementary Psychology

### Additional Credits (3 Credits)

Any Gen Ed approved course

### First-Year Experience (FYE) (1 Credit)

- CHM 19400 - Freshman Chemistry Orientation

### Major Core (63 Credits)

**Note:** Courses with (e) at the end of their title meet the Experiential Learning requirement of the major.

- MA 16032 - Calculus II For Life Sciences
- or
- MA 16400 - Integrated Calculus Analysis Geometry II
- SCI 14000 - Introduction To Forensic Science
- PHYS 22000 - General Physics
- PHYS 22100 - General Physics
- BIOL 10100 - Introductory Biology
- CHM 26505 - Organic Chemistry
- CHM 26300 - Organic Chemistry Laboratory
- CHM 26605 - Organic Chemistry
- CHM 26400 - Organic Chemistry Laboratory
- CHM 29400 - Sophomore Chemistry Seminar
- SCI 22000 - Health And Safety
- BIOL 10200 - Introductory Biology
- CRJU 15000 - Introduction To The Criminal Justice System
- STAT 30100 - Elementary Statistical Methods
- CHM 33300 - Principles Of Biochemistry
- PSY 35000 - Abnormal Psychology
- CHM 32100 - Analytical Chemistry I
- CHM 49800 - Research In Chemistry (2) (e)
- BIOL 24400 - Genetics
- CHM 49400 - Junior-Senior Chemistry Seminar
- CHM 42400 - Analytical Chemistry II
- CRJU 32400 - Criminology

### Other Required Courses (24 Credits)

#### CES Elective (3 Credits)

ASTR (any course); BIOL (any course excluding BIOL 10008, 10010, and BIOL 10700); CHM (any course 20000 or higher); CE (any course); CS (any course excluding CS 10000); EAS (any course); ECE (any course); ENGR (any course excluding 11000, ENGR 18600); FIS (any course); MSE (any course); MA (any course 20000 or higher excluding MA 23700, MA 23800, and MA 23900); ME (any course); PHYS (any course 20000 or higher); STAT (any course 20000 or higher); and SCI, any course from the following:

- SCI 10601 - Food Chemistry
- SCI 12200 - Origin Of The Universe
- SCI 13100 - Science And Environmental Issues
- SCI 14000 - Introduction To Forensic Science
- SCI 15000 - Brewing Science
- SCI 20200 - Environmental Science
- SCI 22000 - Health And Safety

### **Restricted Electives (12 Credits)**

Choose (4): CHM (any course excluding CHM 10000, CHM 11100, CHM 11200, and CHM 19400), PHYS (any course 20000 or higher), or forensics oriented SCI course. See program advisor for a list of available courses.

### **Free Electives (9 Credits)**

Choose (3) free electives.

## **Total 120 Credits Required**

## **Physics, BS**

Physics describes everything around us. This program helps students identify and apply the basic principles that govern our world.

### **Degree Requirements**

#### **PNW General Education Core (33 Credits Minimum)**

##### **English Composition (6 Credits)**

English Composition Any General Education English Composition

##### **Speech Communication (3 Credits)**

Any General Education Speech Communication

##### **Quantitative Reasoning (5 Credits)**

- MA 16300 - Integrated Calculus Analysis Geometry I

##### **Natural Sciences (9 Credits)**

- PHYS 15200 - Mechanics
- PHYS 25100 - Heat, Electricity And Optics

##### **Technology (3 Credits)**

- CS 12300 - Programming I: Java

##### **Humanities (3 Credits)**

Select from the Humanities Core list

##### **Social Sciences (3 Credits)**

Select from the Social Sciences Core list

##### **First-Year Experience (FYE) (1 Credit)**

- PHYS 19400 - Freshman Physics Orientation

### **Major Core (53 Credits)**

**Note:** Courses with (e) at the end of their title meet the Experiential Learning requirement of the major.

- CHM 11500 - General Chemistry
- CHM 11600 - General Chemistry
- MA 16400 - Integrated Calculus Analysis Geometry II
- MA 26100 - Multivariate Calculus
- PHYS 29400 - Sophomore Physics Seminar
- PHYS 34200 - Modern Physics
- PHYS 34300 - Modern Physics Laboratory
- MA 26400 - Differential Equations



- PHYS 31100 - Quantum Physics I
- PHYS 33000 - Intermediate Electricity And Magnetism
- MA 26500 - Linear Algebra
- PHYS 49400 - Junior-Senior Physics Seminar
- CS 12400 - Programming II: C++
- PHYS 31000 - Intermediate Mechanics
- PHYS 40200 - Senior Research I (e)
- PHYS 38000 - Advanced Physics Laboratory
- PHYS 40300 - Senior Research II (e)
- PHYS 41800 - Thermal And Statistical Physics

## Other Required Courses (34 Credits)

### CES Electives (9 Credits)

ASTR (any course); BIOL (any course excluding BIOL 10008, 10010, BIOL 10700); CHM (any course excluding CHM 10000, CHM 11100, CHM 11200, CHM 19400); CE (any course); CS (any course excluding CS 10000); EAS (any course); ECE (any course); ENGR (any course excluding 11000, ENGR 18600); MSE (any course); MA (any course 30000 or higher excluding MA 23700, MA 23800, and MA 23900); ME (any course); PHYS (any course 30000 or higher); SCI (any course excluding SCI 10300, SCI 10400, SCI 10500, SCI 11200, SCI 11300, SCI 11400, SCI 20200 and SCI 31500); and STAT (any course 30000 or higher).

### Physics Electives (15 Credits)

Engineering Physics Concentration: Also allowed with permission are

- MSE 20000 - Materials Science
- ECE 21800 - Linear Circuits Laboratory II
- ECE 20100 - Linear Circuit Analysis I
- ECE 23300 - Microcomputers In Engineering
- ECE 20700 - Electronic Measurement Techniques
- ECE 27500 - Analog and Digital Electronics
- ECE 20200 - Linear Circuit Analysis II
- ME 30500 - General Thermodynamics I
- CS 27500 - Data Structures
- CS 22300 - Computer Architecture And Assembly Language
- CS 30200 - Operating Systems

### Free Electives (10 Credits)

## Total 120 Credits Required

## Physics, BS, Concentration: Computational Physics

Provides students with a strong background in theoretical physics while teaching the necessary skills to use the computer as a problem solving device.

### Degree Requirements

#### PNW General Education Core (33 Credits Minimum)

##### English Composition (6 Credits)

Any General Education English Composition

##### Speech Communication (3 Credits)

Any General Education Speech Communication

##### Quantitative Reasoning (5 Credits)

- MA 16300 - Integrated Calculus Analysis Geometry I

##### Natural Sciences (9 Credits)

- PHYS 15200 - Mechanics

- PHYS 25100 - Heat, Electricity And Optics

### Technology (3 Credits)

- CS 12300 - Programming I: Java

### Humanities (3 Credits)

Select from the Humanities Core list

### Social Sciences (3 Credits)

Select from the Social Sciences Core list

### First-Year Experience (FYE) (1 Credit)

- PHYS 19400 - Freshman Physics Orientation

### Major Core (74 Credits)

**Note:** Courses with (e) at the end of their title meet the Experiential Learning requirement of the major.

- CHM 11500 - General Chemistry
- CHM 11600 - General Chemistry
- MA 16400 - Integrated Calculus Analysis Geometry II
- MA 26100 - Multivariate Calculus
- MA 26500 - Linear Algebra
- PHYS 29400 - Sophomore Physics Seminar
- PHYS 34200 - Modern Physics
- PHYS 34300 - Modern Physics Laboratory
- MA 26400 - Differential Equations
- CS 12400 - Programming II: C++
- PHYS 31100 - Quantum Physics I
- PHYS 33000 - Intermediate Electricity And Magnetism
- PHYS 30800 - Scientific Computation
- CS 27500 - Data Structures
- MA 37700 - Computational Mathematics I
- PHYS 49400 - Junior-Senior Physics Seminar
- PHYS 30900 - Scientific Computation II
- MA 37800 - Computational Mathematics II
- PHYS 31000 - Intermediate Mechanics
- PHYS 40200 - Senior Research I (e)
- CS 33200 - Algorithms
- PHYS 38000 - Advanced Physics Laboratory
- PHYS 40300 - Senior Research II (e)
- PHYS 41800 - Thermal And Statistical Physics
- MSV 56700 - Simulation Techniques

### Other Required Courses (13 Credits)

#### Physics Electives (9 Credits)

Any (3) Physics course 30000 level or higher.

#### Free Electives (4 Credits)

### Total 120 Credits Required

## Physics, BS, Concentration: Engineering Physics

Students combine the basic principles of physics with the applied nature of engineering in order to identify underlying physical relationships and merge them with engineering processes and techniques.

### Degree Requirements

## PNW General Education Core (33 Credits Minimum)

### English Composition (6 Credits)

Any General Education English Composition

### Speech Communication (3 Credits)

Any General Education Speech Communication

### Quantitative Reasoning (5 Credits)

- MA 16300 - Integrated Calculus Analysis Geometry I

### Natural Sciences (9 Credits)

- PHYS 15200 - Mechanics
- PHYS 25100 - Heat, Electricity And Optics

### Technology (3 Credits)

- ENGR 15100 - Software Tools For Engineers  
or
- CS 12300 - Programming I: Java

### Humanities (3 Credits)

Select from the Humanities Core list

### Social Sciences (3 Credits)

Select from the Social Sciences Core list

### First-Year Experience (FYE) (1 Credit)

- PHYS 19400 - Freshman Physics Orientation

## Major Core (69 Credits)

**Note:** Courses with (e) at the end of their title meet the Experiential Learning requirement of the major.

- CHM 11500 - General Chemistry
- CHM 11600 - General Chemistry
- MA 16400 - Integrated Calculus Analysis Geometry II
- MA 26100 - Multivariate Calculus
- ME 27100 - Basic Mechanics I (Statics)
- ECE 20100 - Linear Circuit Analysis I
- ECE 20700 - Electronic Measurement Techniques
- PHYS 29400 - Sophomore Physics Seminar
- PHYS 34200 - Modern Physics
- PHYS 34300 - Modern Physics Laboratory
- MA 26400 - Differential Equations
- ME 27500 - Basic Mechanics II (Dynamics)
- PHYS 31100 - Quantum Physics I
- PHYS 33000 - Intermediate Electricity And Magnetism
- MA 26500 - Linear Algebra
- ECE 15200 - Programming For Engineers
- PHYS 49400 - Junior-Senior Physics Seminar
- ME 30500 - General Thermodynamics I
- MSE 20000 - Materials Science
- PHYS 31000 - Intermediate Mechanics
- PHYS 40200 - Senior Research I (e)
- PHYS 38000 - Advanced Physics Laboratory
- PHYS 40300 - Senior Research II (e)
- PHYS 41800 - Thermal And Statistical Physics

## Other Required Courses (18 Credits)

### Engineering Electives (11 Credits)

Choose (3) from:

- CE 27300 - Mechanics Of Materials
- ECE 27500 - Analog and Digital Electronics
- ECE 33500 - Electronics-Systems
- ECE 37000 - Digital Systems-Logic Design
- ME 31200 - Fluid Mechanics
- ME 31300 - Fluid Mechanics Laboratory
- ME 41600 - Heat Transfer
- Other CE, ECE, ENGR, ME or MSE courses can be substituted with an advisor's permission.

### Mechanical Engineering Specialization

Students pursuing a Mechanical Engineering specialization should take:

- CE 27300 - Mechanics Of Materials
- ME 31200 - Fluid Mechanics
- ME 31300 - Fluid Mechanics Laboratory
- ME 41600 - Heat Transfer

### Electrical Engineering Specialization

Students pursuing an Electrical Engineering specialization should take:

- ECE 27500 - Analog and Digital Electronics
- ECE 33500 - Electronics-Systems
- ECE 37000 - Digital Systems-Logic Design

### Physics Elective (3 Credits)

Any Physics course 30000 level or higher

### Free Electives (4 Credits)

## Total 120 Credits Required

## Physics, BS, Concentration: Nuclear Science

This program provides students with the knowledge that they need to be thoroughly prepared for a career in Nuclear Science and complete the first step in a pipeline that culminates in a Master's degree in Nuclear Engineering from Purdue University in West Lafayette.

## Degree Requirements

### PNW General Education Core (33 Credits Minimum)

#### English Composition (6 Credits)

Any General Education English Composition

#### Speech Communication (3 Credits)

Any General Education Speech Communication

#### Quantitative Reasoning (5 Credits)

- MA 16300 - Integrated Calculus Analysis Geometry I

#### Natural Sciences (9 Credits)

- PHYS 15200 - Mechanics
- PHYS 25100 - Heat, Electricity And Optics

#### Technology (3 Credits)

- ENGR 15100 - Software Tools For Engineers
- or
- CS 12300 - Programming I: Java

or

- CIS 16600 - Introduction To Programming

### Humanities (3 Credits)

Select from the Humanities Core list

### Social Sciences (3 Credits)

Select from the Social Sciences Core list

### First-Year Experience (FYE) (1 Credit)

- PHYS 19400 - Freshman Physics Orientation

### Major Core (80 Credits)

**Note:** Courses with (e) at the end of their title meet the Experiential Learning requirement of the major.

- CHM 11500 - General Chemistry
- CHM 11600 - General Chemistry
- MA 16400 - Integrated Calculus Analysis Geometry II
- MA 26100 - Multivariate Calculus
- ECE 20100 - Linear Circuit Analysis I
- ECE 20700 - Electronic Measurement Techniques
- PHYS 29400 - Sophomore Physics Seminar
- PHYS 34200 - Modern Physics
- PHYS 34300 - Modern Physics Laboratory
- MA 26400 - Differential Equations
- ME 30500 - General Thermodynamics I
- PHYS 31100 - Quantum Physics I
- PHYS 33000 - Intermediate Electricity And Magnetism
- PHYS 30800 - Scientific Computation
- ME 31200 - Fluid Mechanics
- ME 31300 - Fluid Mechanics Laboratory
- PHYS 49400 - Junior-Senior Physics Seminar
- PHYS 47000 - Special Topics In Physics - Nuclear Power
- CS 12400 - Programming II: C++
- MA 26500 - Linear Algebra
- PHYS 31000 - Intermediate Mechanics
- PHYS 40200 - Senior Research I (e)
- PHYS 47000 - Special Topics In Physics - Nuclear Physics
- PHYS 38000 - Advanced Physics Laboratory
- PHYS 40300 - Senior Research II (e)
- PHYS 41800 - Thermal And Statistical Physics
- ME 41600 - Heat Transfer
- ME 41700 - Heat Transfer Laboratory
- PHYS 47000 - Special Topics In Physics - Neutron Physics

### Other Required Courses (7 Credits)

#### Physics Elective (3 Credits)

Any Physics course 30000 level or higher

#### Free Electives (4 Credits)

### Total 120 Credits Required

## Bachelor of Science in Chemistry

## Chemistry, BSCH

The study of the structure and interactions of basic molecules that form all matter. Students learn about the basic molecules that form the earth, living creatures, and man-made products.

### Degree Requirements

#### PNW General Education Core (32 Credits Minimum)

##### English Composition (6 Credits)

Any General Education English Composition

##### Speech Communication (3 Credits)

Any General Education Speech Communication

##### Quantitative Reasoning (5 Credits)

- MA 16300 - Integrated Calculus Analysis Geometry I

##### Natural Sciences (4 Credits)

- CHM 11500 - General Chemistry

##### Technology (3 Credits)

Select from the Technology Core list

##### Humanities (3 Credits)

Select from the Humanities Core list

##### Social Sciences (3 Credits)

Select from the Social Sciences Core list

##### Additional Credits (4 Credits)

- CHM 11600 - General Chemistry

##### First-Year Experience (FYE) (1 Credit)

- CHM 19400 - Freshman Chemistry Orientation

### Major Core (56 Credits)

**Note:** Courses with (e) at the end of their title meet the Experiential Learning requirement of the major.

- CHM 26505 - Organic Chemistry 1
- CHM 26300 - Organic Chemistry Laboratory 1
- CHM 26605 - Organic Chemistry 2
- CHM 26400 - Organic Chemistry Laboratory 2
- CHM 29400 - Sophomore Chemistry Seminar
- CHM 32100 - Analytical Chemistry I
- CHM 33300 - Principles Of Biochemistry
- CHM 34200 - Inorganic Chemistry
- CHM 34201 - Inorganic Chemistry Laboratory
- CHM 37300 - Physical Chemistry 1
- CHM 37400 - Physical Chemistry 2
- CHM 37600 - Physical Chemistry Laboratory
- CHM 42400 - Analytical Chemistry II
- CHM 49400 - Junior-Senior Chemistry Seminar
- CHM 49800 - Research In Chemistry (3) (e)
- SCI 22000 - Health And Safety
- PHYS 15200 - Mechanics
- PHYS 25100 - Heat, Electricity And Optics
- MA 16400 - Integrated Calculus Analysis Geometry II
- MA 26100 - Multivariate Calculus

## Other Required Courses (32 Credits)

### Free Electives (32 Credits)

Select (11) free electives. At least 5 credit hours of Free Electives must be 30000 level or higher.

## Total 120 Credits Required

## Chemistry, BSCH, Concentration: Materials Science

Teaches students how to discover and design new materials that will change engineering and technology significantly in the future.

## Degree Requirements

### PNW General Education Core (32 Credits Minimum)

#### English Composition (6 Credits)

Any General Education English Composition

#### Speech Communication (3 Credits)

Any General Education Speech Communication

#### Quantitative Reasoning (5 Credits)

- MA 16300 - Integrated Calculus Analysis Geometry I

#### Natural Sciences (8 Credits)

- CHM 11500 - General Chemistry
- CHM 11600 - General Chemistry

#### Technology (3 Credits)

Select from the Technology Core list

#### Humanities (3 Credits)

Select from the Humanities Core list

#### Social Sciences (3 Credits)

Select from the Social Sciences Core list

#### First-Year Experience (FYE) (1 Credit)

- CHM 19400 - Freshman Chemistry Orientation

## Major Core (69 Credits)

Note: Courses with (e) at the end of their title meet the Experiential Learning requirement of the major.

- MA 16400 - Integrated Calculus Analysis Geometry II
- PHYS 15200 - Mechanics
- CHM 26505 - Organic Chemistry 1
- CHM 26300 - Organic Chemistry Laboratory 1
- MA 26100 - Multivariate Calculus
- PHYS 25100 - Heat, Electricity And Optics
- CHM 26605 - Organic Chemistry 2
- CHM 26400 - Organic Chemistry Laboratory 2
- CHM 29400 - Sophomore Chemistry Seminar
- SCI 22000 - Health And Safety
- MSE 20000 - Materials Science
- CHM 37300 - Physical Chemistry 1
- CHM 34200 - Inorganic Chemistry
- CHM 34201 - Inorganic Chemistry Laboratory
- MSE 34400 - Materials In Engineering
- CHM 33300 - Principles Of Biochemistry
- CHM 37400 - Physical Chemistry 2

- CHM 37600 - Physical Chemistry Laboratory
- CHM 42800 - Catalysis
- CHM 32100 - Analytical Chemistry I
- CHM 35000 - Coatings And Resins
- CHM 49400 - Junior-Senior Chemistry Seminar
- CHM 42400 - Analytical Chemistry II
- CHM 46400 - Polymer Chemistry
- CHM 46401 - Polymer Chemistry Lab

### Other Required Courses (19 Credits)

- CHM 49800 - Research In Chemistry € (3)

### Free Electives (16 Credits)

Select (6) free electives. At least 5 credit hours of Free Electives must be 30000 level or higher.

### Total 120 Credits Required

**Note:** Courses with (e) at the end of their title meet the Experiential Learning requirement of the major.

## Minor

### Astrophysics Minor

#### Course Requirements (18 Credit Hours)

- PHYS 15200 - Mechanics
- PHYS 34200 - Modern Physics
- ASTR 36300 - The Solar System
- ASTR 36400 - Stars And Galaxies
  
- PHYS 25100 - Heat, Electricity And Optics
- OR**
- PHYS 26100 - Electricity And Optics **AND** one credit hour of supplemental laboratory work in PHYS 27000 Special Topics in Physics

### Chemistry Minor

#### Course Requirements (24 Credit Hours)

##### Chemistry Core (8 Credits)

- CHM 11500 - General Chemistry
- CHM 11600 - General Chemistry

##### Elective Courses (16 Credit Hours)

Sixteen credit hours of chemistry (CHM) courses at the 20000-level or above and a minimum of three credit hours at or above the 30000-level is required. SCI 22000 – Laboratory Health and Safety, and up to three credits of CHM 49800 – Research in Chemistry (ExL) may be used to fulfill this requirement. A GPA of 2.0 or better is required for all elective courses applied to this minor.

### Physics Minor

#### Course Requirements (18 Credit Hours)

##### Required Courses (12 Credits)

- PHYS 15200 - Mechanics
- PHYS 34200 - Modern Physics
- Choose One:**
- PHYS 25100 - Heat, Electricity And Optics



**OR**

- PHYS 26100 - Electricity And Optics and one credit hour of supplemental laboratory work in PHYS 27000 Special Topics in Physics

**Elective Courses (6 Credits)**

Six credits in Physics at the 30000 level or above from those Physics courses (or equivalent) which are required for graduation in the student's major.

## **Department of Mathematics, Statistics, and Computer Sciences**

**Bachelor of Science****Computer Science, BS**

The program teaches students to expand the frontiers of computer science by applying computational principles to technical and societal problems. This includes developing new software, managing information databases and creating graphical solutions to help engineers and scientists visualize the physical and biological world.

**Degree Requirements****PNW General Education Core (30 Credits Minimum)****English Composition (6 Credits)**

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

**Speech Communication (3 Credits)**

- COM 11400 - Fundamentals Of Speech Communication

**Quantitative Reasoning (5 Credits)**

- MA 16300 - Integrated Calculus Analysis Geometry I

**Natural Sciences (3 Credits)**

Any Gen Ed Natural Science with Lab

**Technology (3 Credits)**

- CS 12300 - Programming I: Java

**Humanities (3 Credits)**

Select from the Humanities Core list

**Social Sciences (3 Credits)**

Select from the Social Sciences Core list

**Additional Credits (3 Credits)**

Any Gen Ed Course

**First-Year Experience (FYE) (1 Credit)**

- CS 10000 - An Introduction To Computer Science

**Major Core (54 Credits)**

- CS 12400 - Programming II: C++
- MA 16400 - Integrated Calculus Analysis Geometry II
- CS 22300 - Computer Architecture And Assembly Language
- CS 27500 - Data Structures
- MA 26100 - Multivariate Calculus
- CS 30200 - Operating Systems
- CS 30900 - Discrete Mathematical Structures
- MA 26500 - Linear Algebra
- CS 31600 - Programming Languages

- CS 33200 - Algorithms
- CS 41600 - Software Engineering
- CS 45500 - Interactive Computer Graphics
- STAT 34500 - Statistics
- CS 42000 - Senior Design Project
- CS 44200 - Database Systems
- CS 40400 - Distributed Systems
- CS 41000 - Automata And Computability

### **Other Required Courses (36 Credits)**

#### **Electives (26 Credits)**

Any MA, STAT or CS course elective must be MA 26400 or CS 20600 or a MA, STAT, or CS course at the 30000-level or above.

#### **Science with Lab (3-4 Credits)**

#### **Natural Science Elective (3-4 Credits)**

#### **Experiential Learning Elective (2-4 Credits)**

### **Total 120 Credits Required**

## **Mathematics, BS**

This program provides students the opportunity to work with peers and talented faculty on research projects that fits their talents and interest. This includes pure and applied mathematics and statistics, and joint projects with peers and colleagues in the engineering and science disciplines.

### **Degree Requirements**

#### **PNW General Education Core (30-31 Credits Minimum)**

##### **English Composition (6 Credits)**

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

##### **Speech Communication (3 Credits)**

- COM 11400 - Fundamentals Of Speech Communication

##### **Quantitative Reasoning (5 Credits)**

- MA 16300 - Integrated Calculus Analysis Geometry I

##### **Natural Sciences (3-4 Credits)**

One Gen Ed Science course with Lab

##### **Technology (3 Credits)**

- CS 20600 - Computer Algebra And Programming

##### **Humanities (3 Credits)**

Select from the Humanities Core list

##### **Social Sciences (3 Credits)**

Select from the Social Sciences Core list

##### **Additional Credits (3 Credits)**

Select from any Core list except FYE

##### **First-Year Experience (FYE) (1 Credit)**

- MA 10000 - An Introduction To Mathematical Sciences

### **Major Core (27 Credits)**

- MA 16400 - Integrated Calculus Analysis Geometry II
- MA 26100 - Multivariate Calculus

- MA 26400 - Differential Equations
- MA 26500 - Linear Algebra
- MA 37700 - Computational Mathematics I
- MA 34800 - Discrete Mathematics
- STAT 34500 - Statistics
- MA 33000 - Concepts In Geometry

## Other Required Courses (54-57 Credits)

### Math Major Electives (9 Credits)

Three courses must be selected from an Approved List of 30000 / 40000 level mathematics and statistics courses.

Currently the approved list of Mathematics Major Electives consists of:

- MA 37800 - Computational Mathematics II
- MA 31500 - Introduction To Abstract Mathematics (This course is a prerequisite for MA 44600 and MA 45300)
- MA 44600 - Introduction to Real Analysis
- MA 45300 - Elements Of Algebra I
- MA 47200 - Introduction To Applied Mathematics
- STAT 40001 - Statistical Computing (Experiential Learning)
- STAT 43000 - Applied Statistics

### Science Elective (6-8 Credits)

Choose any two Science courses, one must have a Lab component

### Selected Area Electives (18 Credits)

Mathematics majors must choose an 18 credit hour Selected Area (which may be a Minor). At least 3 courses in the Selected Area must be beyond the introductory level (20000 level or above).

### Approved Electives (19-24 Credits)

Students must see their academic advisor for acceptable courses to fulfill this requirement. These courses are used to support career development, strengthening their Selected Area, etc.

### Experiential Learning or Other Approved Electives (6-8 Credits)

Students may choose from the list of Experiential Learning Courses or other Approved Electives. Experiential Learning Courses may include undergraduate research approved by the department and/or Undergraduate Teaching Assistantships (UTA)

## Total 120 Credits Required

## Mathematics, BS, Concentration: Secondary Teaching

Students in this concentration earn a degree in Mathematics. The Secondary Education program is delivered collaboratively with Purdue University Northwest's School of Education and designed for those interested in teaching in middle and high schools.

### Degree Requirements

#### PNW General Education Core (30 Credits Minimum)

##### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

##### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

##### Quantitative Reasoning (5 Credits)

- MA 16300 - Integrated Calculus Analysis Geometry I

##### Natural Sciences (3-4 Credits)

Any Gen Ed Science with Lab

### Technology (3 Credits)

- CS 20600 - Computer Algebra And Programming

### Humanities (3 Credits)

Select from the Humanities Core list

### Social Sciences (3 Credits)

Select from the Social Sciences Core list

### Additional Credits (3 Credits)

Select from any Gen Ed Core list except FYE

### First-Year Experience (FYE) (1 Credit)

- MA 10000 - An Introduction To Mathematical Sciences

### Major and Concentration Core (69 Credits)

- EDST 20000 - History And Philosophy Of Education
- MA 16400 - Integrated Calculus Analysis Geometry II
- EDPS 22000 - Psychology Of Learning
- MA 26100 - Multivariate Calculus
- EDPS 26000 - Introduction To Special Education
- MA 26400 - Differential Equations
- MA 26500 - Linear Algebra
- EDCI 35501 - Teaching and Learning K-12 Classroom
- MA 37700 - Computational Mathematics I
- MA 33000 - Concepts In Geometry
- MA 34800 - Discrete Mathematics
- EDCI 36600 - Use Of Assessment In The K-12 Classroom
- MA 31500 - Introduction To Abstract Mathematics
- STAT 34500 - Statistics
- EDPS 37000 - Teaching Students With Diverse Learning Needs In K-12 Class
- MA 45300 - Elements Of Algebra I
- EDCI 34400 - Strategies Of Mathematics Instruction In Senior High, Junior High And Middle Schools
- EDCI 30900 - Reading In Middle And Secondary Schools: Methods And Problems
- EDCI 49700 - Supervised Teaching (Experiential Learning)

### Other Required Courses (20 Credits)

#### Science Electives (6-8 Credits)

Choose any two Science courses, one must have a Lab component.

#### Mathematics Major Elective (3 Credits)

MA 31500 is prerequisite for MA 44600 and MA 45300. Mathematics majors in the Secondary Teaching Concentration must take MA 31500 and MA 45300 to prepare for the state licensure exam.

- MA 37800 - Computational Mathematics II
- MA 31500 - Introduction To Abstract Mathematics
- MA 44600 - Introduction to Real Analysis
- MA 45300 - Elements Of Algebra I
- MA 47200 - Introduction To Applied Mathematics
- STAT 40001 - Statistical Computing (Experiential Learning)

#### Electives (9-12 Credits)

See an academic advisor for acceptable courses to fulfill this requirement.

### Total 120 Credits Required

### Master of Science

## Computer Science, MS

The Master of Science in Computer Science integrates fundamental theoretical concepts with sophisticated practical applications. Graduates will be prepared for employment in the field, and, for those students who are so interested, for further studies in computer science. Students must have the necessary prerequisite knowledge to undertake the study of advanced computer science topics.

### Special Program Requirements

1. No more than six credits of coursework with a grade of "C." "B" average must be maintained.
2. All courses taken as a temporary student must post grades of "A" or "B".
3. Plan of Study submitted to Student Advisory Committee before the end of nine semester credits; must be approved by the Graduate School before the student registers for the semester in which the degree is to be awarded.
4. No more than three courses accepted from other institutions may be used on a Plan of Study. Please refer to the section on graduate study for other regulations governing graduate study at Purdue Calumet.

### Degree Requirements

#### Core Courses (9 Credits)

- CS 59000 - Topics In Computer Sciences (Compiling and Programming Systems)
- CS 59000 - Topics In Computer Sciences (Operating Systems)
- CS 59000 - Topics In Computer Sciences (Algorithm Design, Analysis, and Implementation)

#### Electives (21 Credits)

7 approved courses at the graduate level

### Total 30 Credits Required

## Mathematics, MS

The Master of Science in Mathematics is designed to provide students with a course of study that will enhance their knowledge of the fundamental areas of the mathematical sciences. The elective courses allow each student to add the emphasis which most fits with that student's academic and career plans.

### Special Program Requirements

1. No more than six credits of coursework with grade of "C." "B" average must be maintained.
2. All courses taken as a temporary student must post grades of "A" or "B."
3. Plan of Study submitted to Student's Advisory Committee before the end of nine semester credits; must be approved by the Graduate School before the student registers for the semester in which the degree is to be awarded.

### Degree Requirements

#### Core Courses

- MA 52500 - Introduction To Complex Analysis
- MA 54000 - Analysis I
- MA 54100 - Analysis II
- MA 55300 - Introduction To Abstract Algebra
- MA 55400 - Linear Algebra

#### Statistics

One approved course

#### Approved Electives

(5 courses)

Up to six credits may be chosen from approved courses in other departments.

#### Transfer of Credit

No more than three courses accepted from other institutions.

## Total 33 Credits Required

### Minor

## Applied Mathematics Minor

### Course Requirements (23 Credit Hours)

- MA 16300 - Integrated Calculus Analysis Geometry I
- MA 16400 - Integrated Calculus Analysis Geometry II
- MA 26100 - Multivariate Calculus
- MA 26400 - Differential Equations
- MA 26500 - Linear Algebra
- MA 47200 - Introduction To Applied Mathematics or STAT 34500 Statistics  
*Before taking MA 47200, a student should have programming experience*

## Computer Science Minor

### Course Requirements (18 Credit Hours)

#### Required Courses (15 Credits)

- CS 12300 - Programming I: Java
- CS 12400 - Programming II: C++
- CS 22300 - Computer Architecture And Assembly Language
- CS 27500 - Data Structures
- CS 30200 - Operating Systems

#### Elective Course (3 Credits)

##### Choose One:

- CS 31600 - Programming Languages
- CS 33200 - Algorithms
- One 40000 level Computer Science course

## Math, Pre-service Elementary Teachers Minor

*Minimum grade of "C" required for all courses in this minor*

### Course Requirements (18 Credit Hours)

- MA 13700 - Mathematics For Elementary Teachers I
- MA 13800 - Mathematics For Elementary Teachers II
- MA 13900 - Mathematics For Elementary Teachers III
- MA 23700 - Advanced Topics In Mathematics For Elementary School Teachers I
- MA 23800 - Advanced Topics In Mathematics For Elementary School Teachers II
- MA 23900 - Advanced Topics In Mathematics For Elementary School Teachers III

## Mathematics Minor

### Course Requirements (23 Credit Hours)

- MA 16300 - Integrated Calculus Analysis Geometry I
- MA 16400 - Integrated Calculus Analysis Geometry II
- MA 26100 - Multivariate Calculus
- MA 26500 - Linear Algebra
- MA 31500 - Introduction To Abstract Mathematics

Choose one of the following:

- MA 44600 - Introduction to Real Analysis

- MA 45300 - Elements Of Algebra I

## **Statistics Minor**

### **Course Requirements (22 Credit Hours)**

- MA 16300 - Integrated Calculus Analysis Geometry I
- MA 16400 - Integrated Calculus Analysis Geometry II
- MA 26500 - Linear Algebra
- STAT 34500 - Statistics
- STAT 40001 - Statistical Computing
- STAT 43000 - Applied Statistics

## **School of Engineering**

### **Minor**

### **Industrial Engineering Management Minor**

**Minor Option for Mechanical Engineering Students Only**

### **Course Requirements (12 Credit Hours)**

#### **Required Courses (6 Credits)**

- OLS 27400 - Applied Leadership
- STAT 30100 - Elementary Statistical Methods

#### **Elective Course (6 Credits)**

**Choose Two:**

- IET 22400 - Production Planning And Control
- IET 26800 - Facilities Planning
- IET 34400 - Introduction To Simulation
- IET 41100 - Applications Of Lean And Six Sigma Methodologies
- MET 45100 - Manufacturing Quality Control
- MFET 24300 - Automated Manufacturing I
- MGMT 20000 - Introductory Accounting

## **School of Engineering, Department of Electrical and Computer Engineering**

### **Bachelor of Science in Engineering**

### **Interdisciplinary Engineering, BSE**

The interdisciplinary engineering option provides an opportunity for students whose interests and talents, while oriented toward engineering and science, do not coincide with the plans of study of the traditional engineering disciplines and who do not need an ABET-accredited degree. It provides an excellent undergraduate foundation for graduate school in non-engineering fields such as management, medicine, and law, or to begin careers that may lead to administrative or management positions in technological, engineering, or manufacturing operations. The program also prepares students for careers in large non-technological organizations such as financial institutions, which may require skills generally associated with both engineering and business. The program provides opportunities to tailor the large number of technical electives to the students' particular needs. The program is not ABET accredited.

### **Degree Requirements**

*2.0 Average GPA required in all ECE, ME, and CE courses*

### **PNW General Education Core (32 Credits Minimum)**

### **English Composition (6 Credits)**

- ENGL 10400 - English Composition I
- COM 30700 / ENGL 30700

### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

### Quantitative Reasoning (5 Credits)

- MA 16300 - Integrated Calculus Analysis Geometry I (*min. grade C required*)

### Natural Sciences (8 Credits)

- CHM 11500 - General Chemistry
- PHYS 15200 - Mechanics (*min. grade C required*)

### Technology (3 Credits)

- ENGR 15100 - Software Tools For Engineers (*min. grade C required*)

### Humanities (3 Credits)

- PHIL 32400 - Ethics For The Professions

### Social Sciences (3 Credits)

Select from the Social Sciences Core list

### First-Year Experience (FYE) (1 Credit)

- ENGR 18600 - First Year Seminar For Engineers

### Major Core (63 Credits)

(*Minimum grade of C required in the following courses: CE27100, CE27500, ECE 15200, ECE 20100, ECE 20200, ECE 20700, MA16400, MA 26100, MA 26400, and PHYS 26100*)

- ENGR 19000 - Elementary Engineering Design
- MA 16400 - Integrated Calculus Analysis Geometry II
- ME 11500 - Engineering Drawing I
- MA 26100 - Multivariate Calculus
- PHYS 26100 - Electricity And Optics
- ECE 20100 - Linear Circuit Analysis I
- ECE 20700 - Electronic Measurement Techniques
  
- CE 27100 - Basic Mechanics I  
or
- ME 27100 - Basic Mechanics I (Statics)
  
- MA 26400 - Differential Equations
- MA 26500 - Linear Algebra
- ECE 20200 - Linear Circuit Analysis II
  
- CE 27500 - Basic Mechanics II (Dynamics)  
or
- ME 27500 - Basic Mechanics II (Dynamics)
  
- ME 30500 - General Thermodynamics I
  
- ECE 30100 - Signals And Systems  
or
- ME 32500 - Dynamics Of Physical Systems
  
- ECE 31200 - Engineering Economics And Project Management



- ECE 15200 - Programming For Engineers
- ECE 38400 - Linear Control Systems  
or
- ME 48500 - Linear Control Systems
- ECE 23300 - Microcomputers In Engineering
- MSE 20000 - Materials Science
- CE 42900 - Senior Engineering Design I  
or
- ECE 42900 - Senior Engineering Design I  
or
- ME 42900 - Senior Engineering Design I
- CE 43900 - Senior Engineering Design II  
or
- ECE 43900 - Senior Engineering Design II  
or
- ME 43900 - Senior Engineering Design II

### Other Required Courses (25 Credits)

### Technical Electives (22 Credits)

Technical electives are selected by students in consultation with their advisor. Choose (7).

### Humanities or Social Sciences Elective (3 Credits)

### Total 120 Credits Required

## **Bachelor of Science in Electrical Engineering**

### **Electrical Engineering, BSEE, Concentrations:**

### **Bioinstrumentation, Mechatronics, or Power and Energy Systems**

This is a creative profession where electrical engineers develop systems that control, monitor, and energize industrial equipment, household products, and transportation systems resulting in virtually every product found in the home and industry today.

**Students may choose to complete one concentration from the following areas:**

- Bioinstrumentation
- Mechatronics
- Power and Energy Systems

### Degree Requirements

*2.0 Average GPA required in all ECE courses*

### PNW General Education Core (32 Credits Minimum)

### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- COM 30700 / ENGL 30700

### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

### Quantitative Reasoning (5 Credits)

- MA 16300 - Integrated Calculus Analysis Geometry I (*min. grade C required*)

### Natural Sciences (8 Credits)

- CHM 11500 - General Chemistry
- PHYS 15200 - Mechanics (*min. grade C required*)

### Technology (3 Credits)

- ENGR 15100 - Software Tools For Engineers (*min. grade C required*)

### Humanities (3 Credits)

- PHIL 32400 - Ethics For The Professions

### Social Sciences (3 Credits)

Select from the Social Sciences Core list

### First-Year Experience (FYE) (1 Credit)

- ENGR 18600 - First Year Seminar For Engineers

### Major Core (70 Credits)

(*Minimum grade of C required in the following courses: ECE 15200, ECE 20100, ECE 20200, ECE 20700, MA16400, MA 26100, MA 26400, and PHYS 26100*)

- ENGR 19000 - Elementary Engineering Design
- MA 16400 - Integrated Calculus Analysis Geometry II
- MA 26100 - Multivariate Calculus
- PHYS 26100 - Electricity And Optics
- ECE 20100 - Linear Circuit Analysis I
- ECE 20700 - Electronic Measurement Techniques
- ECE 15200 - Programming For Engineers
- MA 26400 - Differential Equations
- ECE 20200 - Linear Circuit Analysis II
- ECE 27001 - Introduction to Digital System Design
- ECE 27500 - Analog and Digital Electronics
- ECE 30100 - Signals And Systems
- ECE 30001 - Signs And Systems Lab
- ECE 31200 - Engineering Economics And Project Management
- ECE 36201 - Microprocessor System Design And Interfacing
- MA 26500 - Linear Algebra
- ECE 30200 - Probabilistic Methods In Electrical And Computer Engineering
- ECE 38400 - Linear Control Systems
- ECE 31100 - Electric And Magnetic Fields
- ECE 42900 - Senior Engineering Design I
- ECE 44800 - Introduction To Communication Theory
- ECE 43900 - Senior Engineering Design II

### Other Required Courses (18 Credits)

#### Engineering Elective (3 Credits)

- ME 27100 - Basic Mechanics I (Statics)  
or
- ME 30500 - General Thermodynamics I  
or
- MSE 20000 - Materials Science

#### Electric and Computer Engineering Elective (9 Credits)

3 courses required:

- ECE 25100 - Object Oriented Programming
- ECE 35400 - Software Engineering Design I
- ECE 37100 - Computer Organization And Design
- ECE 37500 - Digital Integrated Circuits
- ECE 38000 - Computers In Engineering Analysis
- ECE 42600 - Electric Drives
- ECE 43200 - Elements Of Power System Engineering
- ECE 45100 - Industrial Automation
- ECE 45400 - Software Engineering Design II
- ECE 45900 - Advanced Digital System Design
- ECE 46400 - Computer Architecture And Organization
- ECE 46810 - Operating Systems
- ECE 47600 - Digital Signal Processing
- ECE 48300 - Digital Control Systems Analysis And Design
- and any ECE 49500 and above with advisor approval.

### Technical Elective (3 Credits)

- CHM 11600 - General Chemistry
- CS 27500 - Data Structures
- CS 30900 - Discrete Mathematical Structures
- CS 33200 - Algorithms
- CS 44200 - Database Systems
- MA 31500 - Introduction To Abstract Mathematics
- MA 34500 - Coding And Information Theory
- MA 34800 - Discrete Mathematics
- MA 47200 - Introduction To Applied Mathematics
- PHYS 31100 - Quantum Physics I
- PHYS 32200 - Intermediate Optics
- PHYS 34200 - Modern Physics
- STAT 34500 - Statistics
- BUSM 33300 - Total Quality Management
- BUSM 36300 - Total Quality Techniques
- FIN 31000 - Financial Management
- MKG 32400 - Marketing Management
- any CE, ECE, ME, or MSE course 20000 or above and less than 48900 except CE 20100 (The Industrial Practice courses are not allowed); any CE, ECE, ME, MSE, or Computer Science course 48900 & above with advisor approval.

### Free Elective (3 Credits)

### Concentration Options

Students may elect to add a concentration in Bioinstrumentation, Power and Energy Systems, or Bioinstrumentation. These requirements can be accommodated using the Electrical and Computer Engineering, Engineering/Science, and Technical Electives in the Electrical Engineering major. Consult your academic advisor for more information on course requirements and availability.

### Bioinstrumentation Concentration (19 Credits)

- ME 27100 - Basic Mechanics I (Statics)
- ECE 47600 - Digital Signal Processing
- ECE 50600 - Biomedical Instrumentation Design

- ECE 50700 - Introduction To Biomedical Imaging  
Choose One:
- ECE 55400 - Electronic Instrumentation And Control Circuits
- ECE 56900 - Introduction To Robotic Systems
- ECE 59500 - Selected Topics In Electrical Engineering  
Choose One:
- BIOL 10100 - Introductory Biology
- BIOL 21300 - Human Anatomy And Physiology I

### **Mechatronics Concentration (18 Credits)**

- ME 27100 - Basic Mechanics I (Statics)
- ME 27500 - Basic Mechanics II (Dynamics)
- ME 32500 - Dynamics Of Physical Systems
- ECE 38000 - Computers In Engineering Analysis
- ECE 42600 - Electric Drives  
Choose One:
- ECE 45100 - Industrial Automation
- ECE 48300 - Digital Control Systems Analysis And Design
- ME 30500 - General Thermodynamics I
- ME 32000 - Kinematic Analysis And Design

### **Power and Energy Systems Concentration (18 Credits)**

- ECE 42600 - Electric Drives
- ECE 43200 - Elements Of Power System Engineering
- ECE 42301 - Power Electronics  
Choose One:
- ME 27100 - Basic Mechanics I (Statics)
- ME 30500 - General Thermodynamics I
- MSE 20000 - Materials Science  
Choose Two:
- ECE 45100 - Industrial Automation
- ECE 48300 - Digital Control Systems Analysis And Design
- ECE 50900 - Advanced Electric Drives
- ME 30600 - General Thermodynamics II
- ME 27100 - Basic Mechanics I (Statics)
- ME 30500 - General Thermodynamics I

### **Total 120 Credits Required**

## **Bachelor of Science in Computer Engineering**

### **Computer Engineering, BSCMPE**

This program provides a strong theoretical and practical background in both hardware and software, including their applications

### **Degree Requirements**

*2.0 Average GPA required in all ECE courses*

### **PNW General Education Core (32 Credits Minimum)**

#### **English Composition (6 Credits)**

- ENGL 10400 - English Composition I
- COM 30700 / ENGL 30700

#### **Speech Communication (3 Credits)**

- COM 11400 - Fundamentals Of Speech Communication

### Quantitative Reasoning (5 Credits)

- MA 16300 - Integrated Calculus Analysis Geometry I (*min. grade C required*)

### Natural Sciences (6 Credits)

- PHYS 15200 - Mechanics (*min. grade C required*)
- CHM 11500 - General Chemistry

### Technology (3 Credits)

- ENGR 15100 - Software Tools For Engineers (*min. grade C required*)

### Humanities (3 Credits)

- PHIL 32400 - Ethics For The Professions

### Social Sciences (3 Credits)

Select from the Social Sciences Core list

### First-Year Experience (FYE) (3 Credits)

- ENGR 18600 - First Year Seminar For Engineers

### Major Core (78 Credits)

(Minimum grade of C required in the following courses: ECE15200, ECE20100, ECE20200, ECE20700, MA16400, MA26100, MA26400, PHYS26100)

- ENGR 19000 - Elementary Engineering Design
- MA 16400 - Integrated Calculus Analysis Geometry II
- MA 26100 - Multivariate Calculus
- PHYS 26100 - Electricity And Optics
- ECE 20100 - Linear Circuit Analysis I
- ECE 20700 - Electronic Measurement Techniques
- ECE 15200 - Programming For Engineers
- MA 26400 - Differential Equations
- MA 26500 - Linear Algebra
- ECE 20200 - Linear Circuit Analysis II
- ECE 27001 - Introduction to Digital System Design
- ECE 25100 - Object Oriented Programming
- ECE 30100 - Signals And Systems
- ECE 30001 - Signs And Systems Lab
- CS 27500 - Data Structures
- ECE 31200 - Engineering Economics And Project Management
- ECE 36201 - Microprocessor System Design And Interfacing
- CS 30900 - Discrete Mathematical Structures
- ECE 30200 - Probabilistic Methods In Electrical And Computer Engineering
- ECE 37100 - Computer Organization And Design
- ECE 27500 - Analog and Digital Electronics
- ECE 42900 - Senior Engineering Design I
- ECE 44800 - Introduction To Communication Theory
- ECE 35400 - Software Engineering Design I
- ECE 43900 - Senior Engineering Design II

### Other Required Courses (12 Credits)

### Computer Electives (9 Credits)

3 courses required:

- ECE 31100 - Electric And Magnetic Fields

- ECE 37500 - Digital Integrated Circuits
- ECE 45100 - Industrial Automation
- ECE 45400 - Software Engineering Design II
- ECE 45900 - Advanced Digital System Design
- ECE 46400 - Computer Architecture And Organization
- ECE 46810 - Operating Systems
- ECE 47600 - Digital Signal Processing
- ECE 54400 - Digital Communications
- ECE 54700 - Introduction To Computer Communication Networks
- CS 31600 - Programming Languages
- CS 33200 - Algorithms
- CS 40400 - Distributed Systems
- CS 44200 - Database Systems
- Any ECE or CS 49500 and above with advisor approval.

Free Elective (3 Credits)

**Total 122 Credits Required**

## **Master of Science in Engineering**

### **Engineering, MSE**

Purdue University Northwest offers graduate Interdisciplinary Engineering leading to a Master of Science in Engineering degree. Courses are available in computer, electrical, mechanical, civil, metallurgical, and industrial engineering. The program has the flexibility to allow students to elect courses in one or several engineering disciplines. Teaching and research assistantships are available to qualified graduate students.

### **Special Admission Requirements**

- Bachelor's degree in Engineering from an institution accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC/ABET). Other students having adequate mathematical preparation with bachelor's degrees in non-engineering fields may be admitted on a conditional basis – they must complete 18-27 undergraduate credits in the engineering field of their choice with a GPA of 3.0/4.0 or better before being considered for full admission to the Master of Science in Engineering program.
- Undergraduate GPA of 3.0/4.0 or better. Conditional admission may be granted to students with lower GPA's, with the stipulation that they must receive a grade of B or better for the first 9 credits of graduate work. Some students may be advised to complete prerequisite or additional courses which will not count toward their degree.
- Post-baccalaureate admission. Students may enroll to meet individual needs for continuing education rather than for pursuing a degree. Enrollment as a post-baccalaureate student does not imply later approval for degree-seeking status, nor does it guarantee acceptance toward a degree of credit taken as a post-baccalaureate student.

### **Degree Requirements**

1. Non-thesis Option: 30 semester credits.
2. Thesis Option: 30 semester credits, with 9 credits for the thesis research.
3. GPA of 3.0/4.0 for all courses on the approved plan of study. Some advisory committees may require grades higher than C in specific courses.
4. An advisory committee with at least three members and at least one member to represent a related engineering area. Students will consult with a major advisor assigned upon admission.
5. A plan of study established in consultation with the major advisor or professor and reviewed by members of the advisory committee, and the chair of the Graduate Committee.

**Credit for Pre-Admission Course Work:** a maximum of 12 semester credits of courses with grades of B or better and satisfying course requirements on the approved plan of study may be used, subject to approval of the student's advisory

committee. This limit applies to all pre-admission course work, including post-baccalaureate credit at Purdue, undergraduate excess credit, and transfer credit.

**Time limit on reentry:** A new plan of study must be approved if a student is inactive in the program for five years, usually excluding courses previously taken.

## Total 30 Credits Required

## Interdisciplinary Engineering, MSE, Concentration: Civil Engineering

### Thesis Option (30 Credit Hours)

#### Core Courses (15 Credit Hours)

**Any five (5) courses from the list below:**

- CE 50910 - Watershed Management
- CE 53410 - GIS & Remote Sensing applications in Water Resources Engineering
- CE 53710 - Introduction to Optimization and Simulation Models
- CE 53210 - Fundamentals of Design of Steel Girder Bridges
- CE 53430 - Adv Civil Engineering Projects I
- CE 57000 - Advanced Structural Mechanics
- CE 54810 - Plates and Shells
- CE 59701 - Sel Topics in CE offered as Groundwater Hydraulics
- CE 53420 - Traffic Management
- CE 50930 - Solid Waste Management
- CE 53910 - Advanced Hydraulics
- CE 52940 - Advanced Mechanics of Materials
- CE 59701 - Sel Topics offered as Advanced Geotechnical Engineering
- CE 53430 - Advanced CE Proj I
- CE 53610 or NE 53600 Numerical Methods in Engineering
- ME 53400 - Systems Engineering
- ME 51900 - Intro to Wind Energy

#### Technical Electives (6 Credit Hours)

*(Require approval by an advisor)*

- CE 53430 - Advanced CE Proj I
- CE 53610 or ME 53600 Numerical Methods in Engineering
- ME 53400 - Systems Engineering
- ME 51900 - Intro to Wind Energy

#### Thesis (9 Credit Hours)

*Thesis (Phase I)*

*Thesis (Phase II)*

*Thesis (Phase III)*

### Non-Thesis Option (30 Credit Hours)

#### Core Courses (24 Credit Hours)

*(Coursework Only)*

**Any eight (8) course from the list below:**

- CE50910 - Watershed Management
- CE53410 - GIS & Remote Sensing applications in Water Resources Engineering
- CE 53710 - Introduction to Optimization and Simulation Models
- CE53210 - Fundamentals of Design of Steel Girder Bridges

- CE 53430 - Adv Civil Engineering Projects I
- CE 57000 - Advanced Structural Mechanics
- CE54810 - Plates and Shells
- CE 59701 - Sel Topics in CE offered as Groundwater Hydraulics
- CE54810 - Plates and Shells
- CE 59701 - Sel Topics in CE offered as Groundwater Hydraulics
- CE53420 - Traffic Management
- CE50930 - Solid Waste Management
- CE53910 - Advanced Hydraulics
- CE52940 - Advanced Mechanics of Materials
- CE59701 - Sel Topics in CE offered as Advanced Geotechnical Engineering

## Technical Electives (6 Credit Hours)

*(Require approval by an advisor)*

- ME 51600 - Advanced Engineering Project Management
- CE 53610 or ME 53600 Numerical Methods in Engineering
- ME 53400 - Systems Engineering
- ME 51900 - Intro to Wind Energy

## Master of Science in Electrical and Computer Engineering

### Electrical and Computer Engineering, MSECE

The Master of Science in Electrical and Computer Engineering (MSECE) degree program requires a total of 30 credit hours to be completed, with thesis or non-thesis option. It is anticipated that the degree may be completed in two years of full time graduate study. To earn the MSECE degree, students must complete 30 credit hours, with an aggregate minimum grade point average of 3.0 for the courses listed in the Plan of Study.

### Special Admission Requirements

- Bachelor's degree in Electrical & Computer Engineering from an institution accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC/ABET). Other students having adequate mathematical preparation with bachelor's degrees in non-ECE fields may be admitted on a conditional basis – they must complete 18-27 undergraduate credits in the ECE field with a GPA of 3.0/4.0 or better before being considered for full admission to the Master of Science in Electrical & Computer Engineering program. Graduates of non-engineering fields may be admitted to the MSE degree program (see below under MSE degree program) after completing undergraduate math and ECE courses as determined by the ECE Department.
- Undergraduate GPA of 3.0/4.0 or better. Conditional admission may be granted to students with lower GPA's, with the stipulation that they must receive a grade of B or better for the first 9 credits of graduate work. Some students may be advised to complete prerequisite or additional courses which will not count toward their degree.
- Post-baccalaureate admission. Students may enroll to meet individual needs for continuing education rather than for pursuing a degree. Enrollment as a post-baccalaureate student does not imply later approval for degree-seeking status, nor does it guarantee acceptance toward a degree of credit taken as a post-baccalaureate student.

### Non-Thesis Option

1. At least 18 credits of ECE primary graduate-level engineering courses
2. Minimum of 3 credit hours of graduate level mathematics course or equivalent with advisor approval
3. At most 9 credits of graduate-level courses in engineering, math, computer science, physics, chemistry, and biology with advisor approval
4. Maximum of one independent study allowed as a related course in Plan of Study

### Thesis Option



Allows a student to earn credit for conducting independent research leading to a thesis. The thesis research is undertaken and completed under the supervision of a graduate faculty member and the thesis committee. The student's thesis committee is responsible for approving the research plan, monitoring progress and reviewing the thesis prior to acceptance. Thesis option is normally available to students only after their completion of 9 credit hours with an overall grade point average of 3.0 or better in the degree program.

- 9 thesis research credit hours
- At least 18 credits of ECE primary graduate level engineering courses
- Six of thesis hours are considered as part of primary courses
- Minimum of 3 credit hours of graduate level mathematics course or equivalent with advisor approval
- Maximum of one independent study allowed as a related course in Plan of Study
- Updated requirements can also be found at [webs.purduecal.edu/ece/engineer-ing-graduate-program/graduation-requirements](http://webs.purduecal.edu/ece/engineer-ing-graduate-program/graduation-requirements).

## List of Some Primary ECE Courses

- ECE 50100 - Introduction To Digital Processing Of Speech Signals
- ECE 50500 - Networking Programming
- ECE 50600 - Biomedical Instrumentation Design
- ECE 50700 - Introduction To Biomedical Imaging
- ECE 50900 - Advanced Electric Drives
- ECE 51200 - Power Systems
- ECE 51900 - Control Theory II
- ECE 53800 - Digital Signal Processing I
- ECE 54700 - Introduction To Computer Communication Networks
- ECE 56900 - Introduction To Robotic Systems
- ECE 57400 - Software Engineering Methodology
- ECE 58900 - State Estimation And Parameter Identification Of Stochastic Systems
- ECE 59500 - Selected Topics In Electrical Engineering (Advanced MATLAB)
- ECE 59500 - Selected Topics In Electrical Engineering (Power Electronics)
- ECE 59500 - Selected Topics In Electrical Engineering (Renewable Energy)
- ECE 59500 - Selected Topics In Electrical Engineering (Energy Systems)
- ECE 59500 - Selected Topics In Electrical Engineering (Image Processing)
- ECE 59500 - Selected Topics In Electrical Engineering (Intelligent Systems)
- ECE 59500 - Selected Topics In Electrical Engineering (Neural Networks)
- ECE 59500 - Selected Topics In Electrical Engineering (Pattern Recognition)
- ECE 59500 - Selected Topics In Electrical Engineering (Computer Graphics)
- ECE 59500 - Selected Topics In Electrical Engineering (Digital Communication)
- ECE 59500 - Selected Topics In Electrical Engineering (Information Theory)
- ECE 59500 - Selected Topics In Electrical Engineering (Simulation and Visualization)

## List of Some Related Courses

- ECE 51600 – Adv. Engineering Project Management
- ECE 51400 - Advanced Engineering Economics
- ECE 50300 - Numerical Methods In Engineering
- ECE 52501 - Statistical Concepts In Engineering
- ECE 52701 - System Engineering

**Total 30 Credits Required**

**Graduate Certificate**

**Engineering Project Management Graduate Certificate**

## Certificate Requirements

The Graduate Certificate in Engineering Project Management can be earned by completing four courses (12 Credits) from the following graduate courses:

- ME 51600 - Advanced Engineering Project Management (required)
- ME 54300 - Advanced Engineering Economics (required)
- ME 51500 - Quality Control
- ME 53200 - Statistical Concepts in Engineering
- ME 53400 - Systems Engineering
- STAT 51100 - Statistical Methods (may be used instead of ME 53200)
- MGMT 66000 - Introduction to Operations Management

All courses taken for the certificate can be used for the Master of Science in Engineering degree if admitted to that program. Admission to the certificate program requires a Bachelor's degree in Engineering or approval of the Engineering Graduate Coordinator.

## Minor

### Electrical and Computer Engineering Minor

#### Course Requirements (18 Credit Hours)

##### Required Courses (15 Credits)

- ECE 20100 - Linear Circuit Analysis I
- ECE 20200 - Linear Circuit Analysis II
- ECE 20700 - Electronic Measurement Techniques
- ECE 23300 - Microcomputers In Engineering
- ECE 27500 - Analog and Digital Electronics

##### Elective Course (3 Credits)

- ECE 30100 - Signals And Systems
- ECE 31100 - Electric And Magnetic Fields
- ECE 37000 - Digital Systems-Logic Design
- One (1) 30000 level or above ECE course approved by the Engineering Undergraduate Committee

### Electrical Engineering Minor

#### Minor Option for Mechanical Engineering Students Only

##### Required Courses (15 Credit Hours)

- ECE 20100 - Linear Circuit Analysis I
- ECE 20200 - Linear Circuit Analysis II
- ECE 20700 - Electronic Measurement Techniques
- ECE 30800 - Systems Simulation And Control Laboratory
- ECE 32100 - Electromechanical Motion Devices
- ECE 32300 - Electromechanical Motion Devices and Systems Laboratory
- ECE 38200 - Feedback System Analysis And Design

## School of Engineering, Department of Mechanical and Civil Engineering

### Bachelor of Science in Civil Engineering

#### Civil Engineering, BSCE

At Purdue University Northwest, civil engineering is a four-year program of full-time study leading to a degree of Bachelor of Science in Civil Engineering (BSCE). The course of study is preparation for a career in a constantly

changing field and provides a basis for lifelong learning. The Civil Engineering curriculum provides a broad education in the fundamentals of Civil Engineering. Students may pursue a general program or may choose a specialization in areas such as construction engineering, structural engineering, transportation, water resources and environmental engineering. The BSCE degree is accredited by the Engineering Accreditation Commission of ABET.

## Degree Requirements

*2.0 Average GPA required in all ECE, ME, and CE courses*

### PNW General Education Core (32 Credits Minimum)

#### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 30700 - Written And Oral Communication For Engineers

#### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

#### Quantitative Reasoning (5 Credits)

- MA 16300 - Integrated Calculus Analysis Geometry I (*min. grade C required*)

#### Natural Sciences (8 Credits)

- CHM 11500 - General Chemistry
- PHYS 15200 - Mechanics (*min. grade C required*)

#### Technology (3 Credits)

- ENGR 15100 - Software Tools For Engineers (*min. grade C required*)

#### Humanities (3 Credits)

- PHIL 32400 - Ethics For The Professions

#### Social Sciences (3 Credits)

Select from the Social Sciences Core list

#### First-Year Experience (FYE) (1 Credit)

- ENGR 18600 - First Year Seminar For Engineers

### Major Core (75 Credits)

*(Minimum grade of C required in the following courses: CE27101, CE27500, MA16400, MA 26100, MA 26400, PHYS 26100)*

- ENGR 19000 - Elementary Engineering Design
- CE 11500 - Engineering Drawing I
- CE 11600 - Engineering Drawing II
- CE 20100 - Surveying And GIS
- CE 27101 - Basic Mechanics I (Statics)
- CE 20400 - Civil Engineering Materials
- CE 27300 - Mechanics Of Materials
- CE 27301 - Mechanics Of Materials Laboratory
- CE 27500 - Basic Mechanics II (Dynamics)
- CE 33400 - Structural Analysis I
- CE 35100 - Introduction To Transportation Engineering
- CE 35400 - Introduction To Environmental Engineering
- CE 30800 - Construction Engineering Management
- CE 32300 - Soil Engineering
- CE 34200 - Engineering Hydrology and Hydraulics
- CE 31200 - Fluid Mechanics
- CE 42900 - Senior Engineering Design I

- CE 43900 - Senior Engineering Design II
- CE 47100 - Reinforced Concrete Design
- ME 30500 - General Thermodynamics I
- MA 16400 - Integrated Calculus Analysis Geometry II
- MA 26100 - Multivariate Calculus
- MA 26400 - Differential Equations
- MA 26500 - Linear Algebra
- PHYS 26100 - Electricity And Optics
- STAT 34500 - Statistics

### Other Required Courses (15 Credits)

#### Civil Engineering Restricted Science Elective (3 Credits)

- BIOL 10100 - Introductory Biology
- SCI 10300 - Survey Of The Biological World
- SCI 10400 - Introduction To Environmental Biology
- BIOL 22100 - Introduction To Microbiology
- BIOL 31600 - Basic Microbiology

#### Civil Engineering Electives (9 Credits)

Any three CE courses selected by student with approval of advisor

#### Any Humanities or Social Science Course (3 Credits)

### Total 122 Credits Required

## Bachelor of Science in Mechanical Engineering

### Mechanical Engineering, BSME

At Purdue University Northwest, mechanical engineering is a four-year program of full-time study leading to a degree of Bachelor of Science in Mechanical Engineering (BSME). The course of study is preparation for a career in a constantly changing field and provides a basis for lifelong learning. Students may pursue a general program, or may choose a specialization in areas such as Thermal and Fluid Sciences, Solid Mechanics, or Mechatronics (the later leading to a minor). The BSME degree is accredited by the Engineering Accreditation Commission of ABET. The Mechanical Engineering curriculum provides a broad education in the fundamentals of Mechanical Engineering. Students may pursue a general program or may choose a specialization in areas such as Thermal and Fluid Sciences, solid Mechanics, or Mechatronics.

### Degree Requirements

*2.0 Average GPA required in all ECE, ME, and CE courses*

#### PNW General Education Core (32 Credits Minimum)

#### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II  
or
- COM 30700 - Written And Oral Communication For Engineers if available  
or
- ENGL 30700 - Written And Oral Communication For Engineers if available

#### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

#### Quantitative Reasoning (5 Credits)

- MA 16300 - Integrated Calculus Analysis Geometry I (*min. grade C required*)

#### Natural Sciences (4 Credits)

- CHM 11500 - General Chemistry

### Technology (3 Credits)

- ENGR 15100 - Software Tools For Engineers (*min. grade C required*)

### Humanities (3 Credits)

- PHIL 11100 - Ethics  
or
- PHIL 32400 - Ethics For The Professions if available

### Social Sciences (3 Credits)

Select from the Social Sciences Core list

### First-Year Experience (FYE) (1 Credit)

- ENGR 18600 - First Year Seminar For Engineers

### Additional Credits (4 Credits)

- PHYS 15200 - Mechanics (*min. grade C required*)

### Major Core (90 Credits)

(*Minimum grade of C required in the following courses: ECE20100, ECE20200, ECE20700, MA16400, MA26100, MA26400, ME27100, PHYS26100*)

- ENGR 19000 - Elementary Engineering Design
- ECE 20100 - Linear Circuit Analysis I
- ECE 20700 - Electronic Measurement Techniques
- ME 11500 - Engineering Drawing I
- ME 11600 - Engineering Drawing II
- ME 27100 - Basic Mechanics I (Statics)
- CE 27300 - Mechanics Of Materials
- ME 27500 - Basic Mechanics II (Dynamics)
- ME 30500 - General Thermodynamics I
- ME 31100 - Engineering Economics And Project Management
- ME 31200 - Fluid Mechanics
- ME 31300 - Fluid Mechanics Laboratory
- ME 32000 - Kinematic Analysis And Design
- ME 32500 - Dynamics Of Physical Systems
- ME 34500 - Mechanical Engineering Experimentation
- ME 41600 - Heat Transfer
- ME 42900 - Senior Engineering Design I
- ME 43900 - Senior Engineering Design II
- ME 41700 - Heat Transfer Laboratory
- ME 46100 - Machine Design I
- MSE 20000 - Materials Science
- MA 16400 - Integrated Calculus Analysis Geometry II
- MA 26100 - Multivariate Calculus
- MA 26400 - Differential Equations
- PHYS 26100 - Electricity And Optics

### Mechanical Engineering Electives (12 Credits)

Any four of the following:

- ME 30600 - General Thermodynamics II
- ME 40400 - Finite Element Analysis
- ME 42600 - Heating And Air Conditioning Analysis
- ME 48500 - Linear Control Systems

- ME 48600 - Introduction To Manufacturing Engineering
- MSE 34400 - Materials In Engineering

### Engineering Elective (3 Credits)

- Any Engineering (CE, ECE, ME, or MSE) course 30000 level or above.
- ECE 20200 - Linear Circuit Analysis II
- Any course 48900 or above must receive advisor approval.

### Any Humanities or Social Science Course (3 Credits)

### Total 120 Credits Required

## Master of Science in Mechanical Engineering

### Mechanical Engineering, MSME

The MSME degree program requires a total of 30 credit hours to be completed, with thesis or non-thesis option. It is anticipated that the degree may be completed in two years of full time graduate study. To earn the Master of Science in Mechanical Engineering (MSME) degree, students must complete 30 credit hours, with an aggregate minimum grade point average of 3.0 for the courses listed in the Plan of Study.

### Assistantships

Teaching and research assistantships are available to qualified graduate students.

### Course Requirements

One advanced mathematics course (3 credit hours) at the 500-level taught by either the mathematics department or one of the engineering departments is required for both thesis and non-thesis options.

### Thesis Option

Thesis option allows a student to earn credit for conducting independent research leading to a publishable report or thesis. This option requires 21 credit hours of advanced ME/mathematics coursework and a minimum of 9 credit hours of thesis research work.

The thesis research is undertaken and completed under the supervision of a graduate faculty member and the thesis committee. The student's thesis committee is responsible for approving the research plan, monitoring progress and reviewing the thesis prior to acceptance.

Thesis option is normally available to students only after their completion of 9 credit hours with an overall grade point average of 3.0 or better in the degree program.

- 3 credit hours of advanced mathematics at the 500 level taught by either the mathematics department or one of the engineering departments.
- 18 credit hours (six (6) graduate courses) from the approved list of mechanical engineering primary courses (thermo-fluids, dynamics, structural mechanics and machine design).
- 9 credit hours of research

### Non-Thesis Option

The course requirements are divided into three categories:

1. 3 credit hours of advanced mathematics at the 500-level taught by either the mathematics department or one of the engineering departments,
2. 24 credit hours (8 graduate courses) from the approved list of ME primary (thermofluids, dynamics, structural mechanics, machine design) courses, and
3. 3 credit hours (one course) from a list of approved courses in engineering, mathematics, statistics, computer science, physics, and life sciences. Any exceptions to the above requirements must be approved by the graduate committee.

### List of Some Primary ME Courses

- ME 59700 - Advanced Mechanical Engineering Projects I  
or
- CE 57000 - Advanced Structural Mechanics

- ME 59700 - Advanced Mechanical Engineering Projects I (Finite Element Analysis)
- ME 56300 - Mechanical Vibrations
- ME 59700 - Advanced Mechanical Engineering Projects I (Musculoskeletal Biomechanics)
- ME 59700 - Advanced Mechanical Engineering Projects I (Theory of Plates and Shells)
- ME 50200 - Numerical Heat And Mass Transfer
- ME 59700 - Advanced Mechanical Engineering Projects I (Computational Fluid Dynamics (CFD))
- ME 51900 - Introduction To Wind Energy
- ME 52100 - Air Quality Modeling
- ME 52400 - Design And Analysis-Heating Ventilation And Air Conditioning
- ME 52300 - Electronics System Cooling
- ME 58300 – Design of Heat Exchangers
- ME 51100 – Combustion
- ME 59700 - Advanced Mechanical Engineering Projects I (Two Phase Flow and Heat Transfer)
- ME 59700 - Advanced Mechanical Engineering Projects I (Matrix Analysis of Structures)
- ME 59700 - Advanced Mechanical Engineering Projects I (Modeling of Micro/Nano Systems)
- ME 59700 - Advanced Mechanical Engineering Projects I (Vehicle Dynamics)
- ME 50000 - Advanced Thermodynamics
- ME 50500 - Intermediate Heat Transfer
- ME 50900 – Fluid Properties
- ME 51300 - Engineering Acoustics
- ME 56000 - Kinematics
- ME 57500 - Theory And Design Of Control Systems
- ME 58700 - Engineering Optics

### List of Some Related Courses

- ME 59700 - Advanced Mechanical Engineering Projects I (Materials Selection for Design)
- ME 59700 - Advanced Mechanical Engineering Projects I (Numerical Methods for Engineers)
- ME 59700 - Advanced Mechanical Engineering Projects I (Optimization and Simulation Models)
- ME 59700 - Advanced Mechanical Engineering Projects I (Energy System)
- ME 59700 - Advanced Mechanical Engineering Projects I (Solid Waste Management)
- ME 54300 - Advanced Engineering Economics
- ME 51600 - Advanced Engineering Project Management
- ME 59700 - Advanced Mechanical Engineering Projects I (Adv. Mechanical Engineering Projects I)
- ME 53400 - System Engineering
- ME 51500 - Quality Control

**Total 30 Credits Required**

### Minor

### Civil Engineering Minor

### Course Requirements (15 Credit Hours)

- CE 27101 - Basic Mechanics I (Statics)
- CE 27500 - Basic Mechanics II (Dynamics)
- CE 27300 - Mechanics Of Materials
- ME 30500 - General Thermodynamics I
- STAT 34500 - Statistics

**Choose One:**

- CE 20100 - Surveying And GIS
- CE 20400 - Civil Engineering Materials

- CE 30800 - Construction Engineering Management
- CE 31200 - Fluid Mechanics
- CE 32300 - Soil Engineering
- CE 33400 - Structural Analysis I
- CE 34200 - Engineering Hydrology and Hydraulics
- CE 35100 - Introduction To Transportation Engineering
- CE 47100 - Reinforced Concrete Design

## **Civil Engineering Minor (for Mechanical Engineering Students)**

**Minor Option for Mechanical Engineering Students only.**

### **Course Requirements (Min. 15 Credit Hours)**

#### **Required Courses (Min. 12 Credits)**

- CE 27100 - Basic Mechanics I
- CE 32401 - Mechanics Of Materials
- CE 33001 - Structure And Properties Of Materials
- CE 41000 - Fluid Mechanics And Hydraulics

#### **Elective Course (3 Credits)**

**Choose One:**

- CE 30300 - Engineering Surveying
- CE 32300 - Soil Engineering

## **Mechanical Engineering Minor**

### **Course Requirements (22 Credit Hours)**

#### **Required Courses (15 Credits)**

- ME 27100 - Basic Mechanics I (Statics)
- ME 27500 - Basic Mechanics II (Dynamics)
- ME 30500 - General Thermodynamics I
- ME 32401 - Mechanics Of Materials
- ECE 20100 - Linear Circuit Analysis I

#### **Elective Courses (7 Credits)**

**Choose one group:**

- ME 31200 - Fluid Mechanics
- ME 31300 - Fluid Mechanics Laboratory
- ME 30600 - General Thermodynamics II
- OR**
- MSE 20000 - Materials Science
- ME 46100 - Machine Design I
- OR**
- ECE 20700 - Electronic Measurement Techniques
- ME 32500 - Dynamics Of Physical Systems
- ME 34500 - Mechanical Engineering Experimentation



## **College of Humanities, Education, and Social Sciences**

## **College of Humanities, Education, and Social Sciences**

Elaine Carey, Ph.D., Dean

Anne Gregory, Ph.D., Director, School of Education

Renee Conroy, Ph.D., Associate Dean

Neil Nemeth, Ph.D., Associate Dean

<http://academics.pnw.edu/humanities-education-social-sciences/>

Purdue University Northwest offers more than 30 degree programs in the humanities, education and social sciences. Choosing majors in the Humanities, Education and Social Sciences (CHESS) will lead you to a broader understanding of human culture and society. You will be prepared for a wide variety of careers and a life characterized by creativity, community engagement, and personal fulfillment. As a CHESS student you will work with outstanding teachers who are also engaged in research and scholarship in their fields.

As an undergraduate or graduate student you have the opportunity to work with faculty in such wide-ranging projects as Gender and Politics in Renaissance Europe, Script Writing for Radio and Television, the Chicago International Model United Nations, Environmental Science Writing, the Psychology of Climate Change, Apocalyptic Film Heroes, and Writing in Virtual Worlds.

The College is home to the Institute for Social and Policy Research, the Center for Global Studies, the International Film Series, and the Purdue Theater Company – each offering unique educational opportunities to every enrolled student. You can immerse yourself in other cultures through our Study Abroad programs. Every spring the College hosts the Clement S. Stacy Undergraduate Research Conference where students from across the Midwest present the results of their research in the humanities and social sciences.

Our graduates work for the Youth Services Bureau, numerous school districts as teachers, La Porte County Circuit Court, Keyes Counseling, Westville Little School/Pre-School, Chicago Fire Soccer Club, and We Create Media.

## **Accreditations**

- Council for Accreditation of Counseling and Related Educational Programs, 1001 North Fairfax Street, Suite 510 Alexandria, VA 2231, phone (703) 535-599, fax (703) 739-6209. <http://www.cacrep.org/>
- Council for Accreditation of Education Preparation (CAEP), 1140 19th St NW, Suite 400 Washington, DC 20036 (202) 223-0077. <http://caepnet.org/>
- Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE) American Association for Marriage and Family Therapy 112 South Alfred Street, Alexandria, VA 22314 phone: (703) 838-9808 fax: (703) 838-9805. <http://coamfte.org/>
- National Council for Accreditation of Teacher Education (NCATE) 2010 Massachusetts Ave , Suite 500, Washington, DC 20036-1023. [www.ncate.org](http://www.ncate.org)

## **Minors**

Minors offered at Purdue Northwest.

## **Bachelor of Arts**

## **Multidisciplinary Studies, BA**

### **Degree Requirements**

PNW General Education Core (30 Credits Minimum)

**English Composition (6 Credits)**

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

**Speech Communication (3 Credits)**

- COM 11400 - Fundamentals Of Speech Communication

**Quantitative Reasoning (3 Credits)**

- STAT 13000 - Statistics And Contemporary Life  
or
- MA 15300 - College Algebra

**Natural Sciences (3 Credits)**

Any Natural Sciences with Lab

**Technology (3 Credits)**

- CIS 20400 - Introduction To Computer-Based Systems  
or
- other Gen Ed Technology

**Humanities (3 Credits)**

Any English Lit course

**Social Sciences (6 Credits)**

- PSY 12000 - Elementary Psychology
- SOC 10000 - Introductory Sociology  
or
- ANTH 10500 - Cultural Anthropology

**First-Year Experience (FYE) (3 Credits)**

- GNS 10300 - Introduction To Higher Education

**Major Core (90 Credits)**

- ECON 10100 - Survey Of Economics

**Foreign Language (12 Credits)**

Choose from French, German, Japanese, or Spanish. Must complete 4 semesters of the same foreign language.

**Aesthetics (3 Credits)**

Choose 1 course from:

- AD 25500 - Art Appreciation
- MUS 25000 - Music Appreciation
- ENGL 31900 - Creative Writing
- PHIL 10600 - Human Experience In Art Literature, Music, And Philosophy
- THTR 20100 - Theatre Appreciation

**Philosophy (3 Credits)**

- PHIL 10600 - Human Experience In Art Literature, Music, And Philosophy
- PHIL 11000 - Introduction To Philosophy
- PHIL 11100 - Ethics
- PHIL 32400 - Ethics For The Professions

**History (3 Credits)**

- HIST 10300 - Introduction To The Medieval World
- HIST 10400 - Introduction To The Modern World
- HIST 11000 - The Pre-Modern World
- HIST 15100 - American History To 1877

- HIST 15200 - United States Since 1877

### Political Science (3 Credits)

- POL 10100 - American Government And Politics  
or
- POL 13000 - Introduction To International Relations

### Math or Science (6 Credits)

- Choose any MA (except MA 11500), STAT, SCI, BIOL, CHM, EAS, ASTR, or CIS course  
or
- FN 30300 - Essentials Of Nutrition

### MDS Options 1 and 2 (36 Credits)

Courses are dependent upon the following Areas of Study (choose 2): American History, Business, Communication—International/Intercultural Studies, Media Studies, English Literature, English Writing-Writing for Interactive Media, English Writing-Writing for Publication, French, HDFS-Early Childhood, HDFS-Child & Family Services, HTM-Nutrition, Fitness & Health, HTM-Hospitality & Tourism, Law, Politics & Philosophy; Organizational Leadership, Philosophy, Political Science, Psychology, Sociology, Spanish (Heritage), Spanish (Non-Heritage), World History, and others as established.

### Electives (18 Credits)

Any course 10000 level or higher

### SUGR Course EXL (3 Credits)

Senior Undergraduate Research (SUGR) Course - E X L – See your academic advisor for appropriate course selection. IDIS 10001 must be paired with this course to be considered Experiential Learning.

## Total 120 Credits Required

## Bachelor of Liberal Studies

### Liberal Studies, BLS

The Bachelor of Liberal Studies, offered through the College of Humanities, Education, and Social Sciences, allows students the opportunity to tailor their primary and secondary concentrations to meet their specific needs, whether these needs involve promotions at current jobs, new careers, graduate study, or personal fulfillment.

Areas of concentration can include but are not limited to technology, pre-law, pre-medicine, pre-physical therapy, behavioral sciences, communication, business, organizational leadership and supervision, and natural sciences.

Students may also transfer credits from other accredited institutions toward the Bachelor of Liberal Studies degree requirements, making the plan of study even more unique. Students may transfer, for example, courses in paralegal studies, criminal justice, interior design, medical assisting – just to name a few.

### Degree Requirements

#### PNW General Education Core (30 Credits)

#### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

#### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

#### Quantitative Reasoning (3 Credits)

- MA 12301 - Mathematical Ideas or higher  
or
- STAT 11300 - Statistics And Society

#### Natural Sciences (3 Credits)

Select from the Natural Sciences Core list

#### Technology (3 Credits)

- CNIT 10700 - Computers And Software Packages

### Humanities (3 Credits)

Select from the Humanities Core list

### Social Sciences (3 Credits)

- PSY 12000 - Elementary Psychology  
or
- SOC 10000 - Introductory Sociology

### Additional Credits (3 Credits)

Select a course from any Core list except FYE

### First-Year Experience (FYE) (3 Credits)

- GS 19100 - First-Year Experience I

### Supplemental Core (21 Credits)

### Foreign Language (6 Credits)

### U.S. Tradition (3 Credits)

### Global Cultures (3 Credits)

### Literature and the Arts (3 Credits)

### Racial and Ethnic Diversity (3 Credits)

### Gender Issues (3 Credits)

### Liberal Studies Gateway Course (3 Credits)

- IDIS 23500 - Introduction To Great Issues

### Primary Area of Study (30 Credits)

A minimum of 30 credits is required (ordinarily distributed among three or more disciplines) taken beyond core requirements. The primary area of study must be agreed upon by the student and the academic advisor. The primary areas of study include but are not limited to:

- Humanities: creative arts, foreign literature, literature, philosophy, history
- Social and behavioral sciences: economics, political science, psychology, sociology
- Natural science and mathematics: biology, chemistry, mathematics, physics
- Various technology and interdisciplinary areas

### Secondary Area of Study (21 Credits)

A minimum of 21 credits is required (ordinarily distributed among two or more disciplines) taken beyond the core. The secondary area must be agreed upon by the student and the academic advisor.

### Liberal Studies Capstone Courses (6 Credits)

- IDIS 43500 - Great Issues I
- IDIS 43600 - Great Issues II

### Free Electives (9 Credits)

### Total 120 Credits Required

#### Other Requirements and Limitations:

- Students must have a completed plan of study on file with the Department of History and Philosophy by their junior year. Otherwise, on-time graduation cannot be assured.
- A minimum of 30 credits must be taken at the 300 level or above
- A minimum of 30 credits must be taken at the North Central campus
- A minimum of 32 credits must be taken at a campus of Purdue University at the junior level or above
- A maximum of eight courses from any one discipline may be counted toward the fulfillment of the degree requirement

### Core Listing

## Supplemental Core List

### Gender Issues

- ANTH 23000 - Gender Across Cultures
- COM 37600 - Communication And Gender
- ENGL 31100 - Identity In Ethnic American Women's Literature
- ENGL 36000 - Gender And Literature
- GBG 45000 - Women In Business
- HIST 36500 - Women In America
- IDIS 10600 - Introduction To Gender Studies
- PHIL 40800 - Philosophy Of Love And Friendship
- PSY 23900 - The Psychology Of Women
- PSY 36500 - Development Of Gender Roles In Children
- SOC 31501 - Gender In Society
- SOC 31700 - Sociology Of Sex And Sexualities
- WOST 12100 - Introduction To Women's Studies

### Global Cultures

- ANTH 20500 - Human Cultural Diversity
- ASL 28000 - American Deaf Community: Language, Culture, And Society
- ENGL 26600 - World Literature: From The Beginnings To 1700 A.D.
- ENGL 26700 - World Literature: From 1700 A.D. To The Present
- ENGL 36600 - Postcolonial Literatures
- HIST 10500 - Survey Of Global History
- HIST 27100 - Introduction To Colonial Latin American History (1492-1810)
- HIST 27200 - Introduction To Modern Latin American History (1810 To The Present)
- HIST 30501 - Latin American History Through Film
- HIST 35201 - Revolution And Revolutionaries In 20th And 21st Century Latin America
- HIST 36110 - Environmental History Of Latin America
- HIST 36600 - Hispanic Heritage Of The United States
- HIST 40100 - Indigenous Traditions Of Latin America
- HIST 42500 - Social And Ecological History Of The Andes
- LALS 10100 - Introduction To Latin American Studies
- PHIL 23000 - Religions Of The East
- POL 13000 - Introduction To International Relations
- POL 14100 - Governments Of The World
- POL 23200 - Contemporary Crises In International Relations
- POL 32300 - Comparative Environmental Policy
- POL 34500 - West European Democracies In The Post-Industrial Era
- SOC 40300 - Sociology Of Developing Countries In Era Of Globalization
- SOC 40400 - The Environment And Social Justice
- SOC 40500 - Power, Social Control And The Media
- SOC 40600 - People's Movements And Social Power
- SPAN 23500 - Spanish American Literature In Translation

### Individual and Society

- ANTH 10000 - Introduction To Anthropology
- COM 21200 - Approaches To The Study Of Interpersonal Communication
- COM 25000 - Mass Communication And Society

- COM 32000 - Small Group Communication
- COM 32400 - Introduction To Organizational Communication
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- ENGL 22700 - Elements Of Linguistics
- NUR 21800 - Human Development And Health Promotion
- NUR 22200 - Foundations Of Holistic Health And Wellness
- PSY 12000 - Elementary Psychology
- PSY 20000 - Introduction To Cognitive Psychology
- PSY 23500 - Child Psychology
- PSY 24000 - Introduction To Social Psychology
- PSY 25000 - Psychology Of Adjustment
- PSY 25100 - Health Psychology
- PSY 35000 - Abnormal Psychology
- SOC 10000 - Introductory Sociology
- SOC 34000 - General Social Psychology
- SOC 35000 - Social Psychology Of Marriage
- SOC 36500 - Constructing American Families

## Literature and the Arts

- AD 11300 - Basic Drawing
- AD 25500 - Art Appreciation
- AD 38300 - Modern Art
- COM 24000 - Introduction To Oral Interpretation
- ENGL 20100 - The Nature Of Literary Study
- ENGL 20500 - Introduction To Creative Writing
- ENGL 22100 - Introduction To Shakespeare
- ENGL 23000 - Great Narrative Works
- ENGL 23100 - Introduction To Literature
- ENGL 23200 - Thematic Studies In Literature
- ENGL 23500 - Introduction To Drama
- ENGL 23700 - Introduction To Poetry
- ENGL 23800 - Introduction To Fiction
- ENGL 23900 - Introduction To Biography
- ENGL 24000 - Survey Of The British Literature: From The Beginnings Through The Neoclassical Period
- ENGL 24100 - Survey Of The British Literature: From The Rise Of Romanticism To The Modern Period
- ENGL 25000 - Great American Books
- ENGL 25700 - Literature Of Black America
- ENGL 26400 - The Bible As Literature
- ENGL 26600 - World Literature: From The Beginnings To 1700 A.D.
- ENGL 26700 - World Literature: From 1700 A.D. To The Present
- ENGL 28600 - The Movies
- ENGL 31100 - Identity In Ethnic American Women's Literature
- ENGL 31800 - Graphic Narrative
- ENGL 35000 - Survey Of American Literature From Its Beginnings To 1865
- ENGL 35100 - Survey Of American Literature From 1865 To The Post-World War II Period
- ENGL 35600 - American Humor

- ENGL 36000 - Gender And Literature
- ENGL 36600 - Postcolonial Literatures
- ENGL 37300 - Science Fiction And Fantasy
- ENGL 37700 - Major Modern Poetry
- ENGL 37900 - The Short Story
- ENGL 38100 - The British Novel
- ENGL 38200 - The American Novel
- ENGL 40700 - Introduction To Poetry Writing
- ENGL 40900 - Introduction To Fiction Writing
- ENGL 41000 - Introduction To Creative Nonfiction Writing
- ENGL 41100 - Studies In Major Authors
- ENGL 44100 - Chaucer's Canterbury Tales
- ENGL 44200 - Shakespeare
- ENGL 44400 - Milton
- ENGL 46900 - Issues In Contemporary Criticism And Theory
- MUS 25000 - Music Appreciation
- PHIL 27500 - The Philosophy Of Art
- SPAN 23500 - Spanish American Literature In Translation
- SPAN 24100 - Introduction To The Study Of Hispanic Literature
- SPAN 33500 - The Literature Of The Spanish-Speaking Peoples In The United States
- THTR 20100 - Theatre Appreciation
- THTR 30800 - The History And Development Of The American Musical Theatre
- THTR 34800 - Dramatic Performance In Context

## Racial and Ethnic Diversity

- ANTH 37900 - Native American Cultures
- ENGL 25700 - Literature Of Black America
- HIST 36600 - Hispanic Heritage Of The United States
- HIST 40100 - Indigenous Traditions Of Latin America
- HIST 46601 - Immigration And Ethnicity In U S History
- LALS 10100 - Introduction To Latin American Studies
- PSY 33400 - Cross Cultural Psychology
- PSY 33500 - Stereotyping And Prejudice
- SOC 31000 - Racial And Ethnic Diversity
- SPAN 33500 - The Literature Of The Spanish-Speaking Peoples In The United States

## Social Ethics

- ENGL 21600 - Ethics And Literature
- PHIL 11100 - Ethics
- PHIL 32500 - Ethics And Public Health
- SOC 22000 - Social Problems

## US Traditions

- ENGL 25000 - Great American Books
- ENGL 35000 - Survey Of American Literature From Its Beginnings To 1865
- ENGL 35100 - Survey Of American Literature From 1865 To The Post-World War II Period
- ENGL 38200 - The American Novel
- GBG 12700 - Development Of Business In The United States
- HIST 15100 - American History To 1877

- HIST 15200 - United States Since 1877
- HIST 31005 - The Civil War And Reconstruction, 1850 To 1877
- HIST 35001 - Gettysburg: Three Days That Changed America
- HIST 36700 - 20th Century American History
- HIST 36800 - Episodes In American Religious History
- HIST 37800 - Early National America: 1787-1850
- HIST 38600 - History Of American Foreign Relations
- HIST 46000 - American Colonial History
- HIST 46100 - The Revolutionary Era, 1763 To 1800
- HIST 46400 - Jacksonian America 1815-1850
- HIST 46700 - The Emergence Of Modern America
- HIST 46800 - Recent American History
- NUR 22200 - Foundations Of Holistic Health And Wellness
- NUR 34900 - Contemporary Trends In Health Care Systems
- POL 10100 - American Government And Politics
- POL 23300 - Introduction to The Study Of Law

## Western Heritage

- ENGL 26400 - The Bible As Literature
- HIST 10200 - Introduction To The Ancient World
- HIST 10300 - Introduction To The Medieval World
- HIST 10400 - Introduction To The Modern World
- HIST 29000 - Russia: Yesterday, Today, And Tomorrow
- HIST 40300 - Europe In The Reformation
- HIST 40400 - Kings And Philosophers: Europe 1618-1789
- HIST 40500 - The French Revolution And Napoleon
- HIST 40600 - Rebels And Romantics: Europe 1815-1870
- NUR 22200 - Foundations Of Holistic Health And Wellness
- PHIL 11000 - Introduction To Philosophy
- PHIL 30100 - History Of Ancient Philosophy
- PHIL 30200 - History Of Medieval Philosophy
- PHIL 23100 - Religions Of The West
- POL 35000 - Foundations Of Western Political Theory: From The Renaissance To Marx
- POL 35300 - Current Political Ideologies

## Department of Behavioral Sciences

### Bachelor of Arts

### Behavioral Sciences, BA

The Bachelor of Arts in Behavioral Sciences (BABS) is designed to give students the necessary background for entry-level employment in social services, currently one of the fastest-growing fields in the Midwest. It also provides a solid foundation for students wishing to pursue graduate work in psychology or sociology.

### Degree Requirements

#### PNW General Education Core (30 Credits Minimum)

#### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

#### Speech Communication (3 Credits)



- COM 11400 - Fundamentals Of Speech Communication

### **Quantitative Reasoning (3 Credits)**

- MA 12301 - Mathematical Ideas

### **Natural Sciences (3 Credits)**

Select from the Natural Science Core list

### **Technology (3 Credits)**

Select from the Technology Core list

### **Humanities (3 Credits)**

- ENGL 23100 - Introduction To Literature  
or
- HIST 10300 - Introduction To The Medieval World

### **Social Sciences (6 Credits)**

- PSY 12000 - Elementary Psychology
- ANTH 10500 - Cultural Anthropology  
or
- ANTH 14100

### **First-Year Experience (FYE) (3 Credits)**

- HIST 15100 - American History To 1877
- POL 13000 - Introduction To International Relations
- SWRK 26100 - Introduction To Social Work

### **Supplemental Core (30 Credits)**

#### **Modern Language (6 Credits)**

#### **U.S. Tradition (3 Credits)**

#### **Western Heritage (3 Credits)**

#### **Global Cultures (3 Credits)**

#### **Literature and the Arts (3 Credits)**

#### **Racial and Ethnic Diversity (3 Credits)**

#### **Gender Issues (3 Credits)**

#### **Social Ethics (3 Credits)**

#### **Individual and Society (3 Credits)**

### **Behavioral Sciences - Generalist Core (12 Credits)**

- SOC 10000 - Introductory Sociology
- SOC 38200 - Introduction To Statistics In Sociology
- SOC 38300 - Introduction To Research Methods In Sociology

#### **Choose One:**

- ANTH 10000 - Introduction To Anthropology
- SWRK 26100 - Introduction To Social Work

### **Electives (48 Credits)**

#### **Psychology Elective Courses (6 Credits)**

(2) Psychology elective courses at 200 level +

#### **Sociology Elective Courses (6 Credits)**

(2) Sociology elective courses at 200 level +

#### **History Elective (3 Credits)**

**Anthropology Elective Course (3 Credits)**

Anthropology elective course at 200 level +

**Anthropology, Sociology, or Psychology Courses (6 Credits)**

(2) Anthropology, Sociology, or Psychology Courses at 300 level +

**Free Electives (24 Credits)****Total 120 Credits Required****Behavioral Sciences, BA, Concentration: Sociology**

The Bachelor of Arts in Behavioral Sciences (BABS) is designed to give students the necessary background for entry-level employment in social services, currently one of the fastest-growing fields in the Midwest. It also provides a solid foundation for students wishing to pursue graduate work in psychology or sociology.

**Degree Requirements****PNW General Education Core (30 Credits Minimum)****English Composition (6 Credits)**

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

**Speech Communication (3 Credits)**

- COM 11400 - Fundamentals Of Speech Communication

**Quantitative Reasoning (3 Credits)**

- MA 12301 - Mathematical Ideas

**Natural Sciences (3 Credits)**

Select from the Natural Sciences Core list

**Technology (3 Credits)**

Select from the Technology Core list

**Humanities (3 Credits)**

- ENGL 23100 - Introduction To Literature
- or
- HIST 10300 - Introduction To The Medieval World

**Social Sciences (6 Credits)**

- PSY 12000 - Elementary Psychology
  
- ANTH 10500 - Cultural Anthropology
- or
- POL 14100 - Governments Of The World

**First-Year Experience (FYE) (3 Credits)**

- HIST 15100 - American History To 1877
- or
- POL 13000 - Introduction To International Relations

**Supplemental Core (30 Credits)****Modern Language (6 Credits)****U.S. Tradition (3 Credits)****Western Heritage (3 Credits)****Global Cultures (3 Credits)****Literature and the Arts (3 Credits)****Racial and Ethnic Diversity (3 Credits)**

Gender Issues (3 Credits)

Social Ethics (3 Credits)

Individual and Society (3 Credits)

Behavioral Sciences - Sociology Core (12 Credits)

- SOC 10000 - Introductory Sociology
- SOC 38200 - Introduction To Statistics In Sociology
- SOC 38300 - Introduction To Research Methods In Sociology

Choose One:

- ANTH 10000 - Introduction To Anthropology
- SWRK 26100 - Introduction To Social Work

Electives (48 Credits)

Sociology Electives (21 Credits)

(7) Sociology Elective Courses, 200 level +

Free Electives (27 Credits)

Total 120 Credits Required

## **Human Development and Family Studies, BA, Concentration: Early Childhood**

Degree Requirements

PNW General Education Core (31 Credits Minimum)

English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

Quantitative Reasoning (3 Credits)

- STAT 13000 - Statistics And Contemporary Life
- or
- MA 15300 - College Algebra

Natural Sciences (3 Credits)

Any Natural Sciences with Lab

Technology (3 Credits)

- CIS 20400 - Introduction To Computer-Based Systems
- or
- other Gen Ed Technology

Humanities (3 Credits)

Any 10000 level History course

Social Sciences (6 Credits)

- PSY 12000 - Elementary Psychology
- SOC 10000 - Introductory Sociology

Additional Credits (3 Credits)

- FN 30300 - Essentials Of Nutrition
- Or other non-lab Gen Ed Science

First-Year Experience (FYE) (1 Credit)

- BHS 10300 - Freshman Experience In Behavioral Sciences

### Major Core (63 Credits)

- HDFS 10100 - Working With Parents
- HDFS 20500 - Introduction To Family Dynamics
- HDFS 21000 - Introduction To Human Development
- HDFS 21600 - Introduction To Early Childhood Education
- HDFS 21700 - Issues In Early Childhood Education
- HDFS 22800 - Developmental Infant And Toddler Care
- HDFS 30800 - Language And Literature In Early Childhood
- HDFS 31001 - Math, Science, And Social Studies In Early Childhood
- HDFS 34000 - Teaching Very Young Children With Special Needs
- HDFS 34101 - Infants And Young Children In Family And Community
- HDFS 34601 - Sexuality, Intimacy And Family Life
- HDFS 35400 - Practicum In Early Childhood I
- HDFS 42100 - Children's Social Development
- HDFS 43101 - Techniques Of Human Assessment
- HDFS 45200 - Family Resource Management
- HDFS 45501 - Practicum In Early Childhood II  
or
- HDFS 45601 - Practicum With Infants And Toddlers
- HDFS 46200 - Ethics And Professional Development In Family Life Education
- POL 34601 - Family Law
- SOC 35000 - Social Psychology Of Marriage
- SOC 38200 - Introduction To Statistics In Sociology
- SOC 38300 - Introduction To Research Methods In Sociology

### Other Required Courses (26 Credits)

- ECON 10100 - Survey Of Economics

### Foreign Language (12 Credits)

Choose from French, German, Japanese, or Spanish. Must complete 4 semesters of the same foreign language.

### Aesthetics (3 Credits)

Choose 1 course from:

- AD 25500 - Art Appreciation
- MUS 25000 - Music Appreciation
- ENGL 31900 - Creative Writing
- PHIL 10600 - Human Experience In Art Literature, Music, And Philosophy
- THTR 20100 - Theatre Appreciation

### Philosophy (3 Credits)

Any 10000 level PHIL course except PHIL 15000.

### Literature (3 Credits)

Any English Lit course

### Free Elective (2 Credits)

### Total 120 Credits Required

## **Human Development and Family Studies, BA, Concentration: Individual and Family Services**

### **Degree Requirements**

#### **PNW General Education Core (31 Credits Minimum)**

##### **English Composition (6 Credits)**

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

##### **Speech Communication (3 Credits)**

- COM 11400 - Fundamentals Of Speech Communication

##### **Quantitative Reasoning (3 Credits)**

- STAT 13000 - Statistics And Contemporary Life  
or
- MA 15300 - College Algebra

##### **Natural Sciences (3 Credits)**

Any Natural Sciences with Lab

##### **Technology (3 Credits)**

- CIS 20400 - Introduction To Computer-Based Systems  
or
- other Gen Ed Technology

##### **Humanities (3 Credits)**

Any 10000 level History course

##### **Social Sciences (6 Credits)**

- PSY 12000 - Elementary Psychology
- SOC 10000 - Introductory Sociology

##### **Additional Credits (3 Credits)**

- FN 30300 - Essentials Of Nutrition  
or
- non-lab Science

##### **First-Year Experience (FYE) (1 Credit)**

- BHS 10300 - Freshman Experience In Behavioral Sciences

##### **Major Core (63 Credits)**

- COM 21400 - Comparative Theories Of Interpersonal Communication
- HDFS 10100 - Working With Parents
- HDFS 20500 - Introduction To Family Dynamics
- HDFS 21000 - Introduction To Human Development
- HDFS 34101 - Infants And Young Children In Family And Community
- HDFS 34200 - Adolescence In Family And Community
- HDFS 34601 - Sexuality, Intimacy And Family Life
- HDFS 41300 - Diversity In Families
- HDFS 45200 - Family Resource Management
- HDFS 46200 - Ethics And Professional Development In Family Life Education
- POL 34601 - Family Law
- SOC 22000 - Social Problems
- SOC 26100 - Basic Helping Skills For Human Services

- SOC 30600 - Methods In Human Services
- SOC 30700 - Field Experience In Human Services
- SOC 35000 - Social Psychology Of Marriage
- SOC 36400 - Child And Family Welfare
- SOC 38200 - Introduction To Statistics In Sociology
- SOC 38300 - Introduction To Research Methods In Sociology

### Guided Elective (3 Credits)

Choose from:

- PSY 35500 - Child Abuse And Neglect
- SOC 36100 - The Institution Of Social Welfare
- SOC 43101
- SOC 44000 - Sociology Of Health And Illness
- HDFS 43101 - Techniques Of Human Assessment
- HDFS 42100 - Children's Social Development

### Other Required Courses (26 Credits)

- ECON 10100 - Survey Of Economics

### Foreign Language (12 Credits)

Choose from French, German, Japanese, or Spanish. Must complete 4 semesters of the same foreign language.

### Aesthetics (3 Credits)

Choose 1 course from:

- AD 25500 - Art Appreciation
- MUS 25000 - Music Appreciation
- ENGL 31900 - Creative Writing
- PHIL 10600 - Human Experience In Art Literature, Music, And Philosophy
- THTR 20100 - Theatre Appreciation

### Philosophy (3 Credits)

Any 10000 level PHIL course except PHIL 15000.

### Literature (3 Credits)

Any English Lit course

### Free Elective (2 Credits)

## Total 120 Credits Required

## Social Work, BA

The BASW Program educates students to become professionals in social work. The BASW curriculum provides a professional social work foundation that is transferable to different settings, population groups and problem areas. Students select a curriculum focused in clinical, organizational, community, international and social justice issues with a strong emphasis on service learning in the community with excellence in scholarship.

## Degree Requirements

### PNW General Education Core (30 Credits Minimum)

#### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

#### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

#### Quantitative Reasoning (3 Credits)

- STAT 11300 - Statistics And Society

### Natural Sciences (3 Credits)

- ASTR 26300 - Descriptive Astronomy: The Solar System
- EAS 10400 - Oceanography
- EAS 12000 - Introduction To Geography

### Technology (3 Credits)

- CIS 20400 - Introduction To Computer-Based Systems

### Humanities (3 Credits)

- HIST 10300 - Introduction To The Medieval World
- HIST 10400 - Introduction To The Modern World
- PHIL 11000 - Introduction To Philosophy

### Social Sciences (3 Credits)

- PSY 12000 - Elementary Psychology

### Additional Credits (3 Credits)

- SWRK 16200 - Careers In Social Work And Human Services

### First-Year Experience (FYE) (3 Credits)

- HIST 10400 - Introduction To The Modern World
- PHIL 11000 - Introduction To Philosophy
- POL 13000 - Introduction To International Relations
- GS 19100 - First-Year Experience I

### Supplemental Core (36 Credits)

#### Modern Language (12 Credits)

(credit in the fourth semester required)

#### U.S. Tradition (3 Credits)

#### Western Heritage (3 Credits)

#### Global Cultures (3 Credits)

#### Literature and the Arts (3 Credits)

#### Racial and Ethnic Diversity (3 Credits)

#### Gender Issues (3 Credits)

#### Social Ethics (3 Credits)

#### Individual and Society (3 Credits)

### Major Core (54 Credits)

- SOC 10000 - Introductory Sociology
- SWRK 24000 - Social Work Helping Communication With Individuals And Small Groups
- SWRK 26100 - Introduction To Social Work
- SWRK 30100 - Social Work Research
- SWRK 32100 - Human Behavior In The Social Environment I
- SWRK 32200 - Human Behavior In The Social Environment II
- SWRK 35100 - Junior Practicum
- SWRK 35900 - Macro Practice: Human Service Organizations And The Community
- SWRK 36100 - Institutional Social Welfare
- SWRK 36200 - Social Work Practice I
- SWRK 36300 - Social Work Practice II
- SWRK 36600 - Group Practice In Social Work
- SWRK 46100 - Field Practicum In Social Work

- SWRK 46400 - Field Practicum In Social Work II
- Social Work Elective 30000 level or above Credits Hours: 3.00
- Social Science Elective Credit Hours: 3.00

## **Total 120 Credits Required**

## **Sociology, BA**

### **Degree Requirements**

#### **PNW General Education Core (34 Credits Minimum)**

##### **English Composition (6 Credits)**

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

##### **Speech Communication (3 Credits)**

- COM 11400 - Fundamentals Of Speech Communication

##### **Quantitative Reasoning (3 Credits)**

- STAT 13000 - Statistics And Contemporary Life  
or
- MA 15300 - College Algebra

##### **Natural Sciences (6 Credits)**

- FN 30300 - Essentials Of Nutrition
- and one Natural Science course with Lab

##### **Technology (3 Credits)**

- CIS 20400 - Introduction To Computer-Based Systems

##### **Humanities (3 Credits)**

Any English Lit course

##### **Social Sciences (6 Credits)**

- PSY 12000 - Elementary Psychology
- SOC 10000 - Introductory Sociology

##### **Additional Credits (3 Credits)**

Any 10000 level History course

##### **First-Year Experience (FYE) (1 Credit)**

- BHS 10300 - Freshman Experience In Behavioral Sciences

##### **Major Core (33 Credits)**

- SOC 22000 - Social Problems
- SOC 31400 - Race And Ethnic Relations or SOC 41100 Social Stratification
- SOC 38200 - Introduction To Statistics In Sociology
- SOC 38300 - Introduction To Research Methods In Sociology
- SOC 40200 - Sociological Theory
- Sociology Electives – 30000 level or above Credit Hours: 18.00

##### **Other Required Courses (53 Credits)**

- ECON 10100 - Survey Of Economics

##### **Foreign Language (12 Credits)**

Spanish, French, German, or Japanese. Must complete 4 semesters of the same foreign language

##### **Aesthetics (3 Credits)**

The Department of Behavioral Sciences accepts the following:

- AD 25500 - Art Appreciation



- ENGL 31900 - Creative Writing
- ENGL 38600 - History Of Film To 1938
- ENGL 28600 - The Movies
- MUS 25000 - Music Appreciation
- PHIL 10600 - Human Experience In Art Literature, Music, And Philosophy
- THTR 20100 - Theatre Appreciation

### **Philosophy (3 Credits)**

Any 10000 level PHIL course, except PHIL 15000

### **Political Science (3 Credits)**

Any 10000 level POL course

### **Electives (29 Credits)**

Free Electives/Minor

## **Total 120 Credits Required**

## **Sociology, BA, Concentration: Criminal Justice**

### **Degree Requirements**

#### **PNW General Education Core (34 Credits Minimum)**

##### **English Composition (6 Credits)**

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

##### **Speech Communication (3 Credits)**

- COM 11400 - Fundamentals Of Speech Communication

##### **Quantitative Reasoning (3 Credits)**

- STAT 13000 - Statistics And Contemporary Life  
or
- MA 15300 - College Algebra

##### **Natural Sciences (6 Credits)**

- FN 30300 - Essentials Of Nutrition
- one Natural Science course with Lab

##### **Technology (3 Credits)**

- CIS 20400 - Introduction To Computer-Based Systems

##### **Humanities (3 Credits)**

Any English Lit course

##### **Social Sciences (6 Credits)**

- PSY 12000 - Elementary Psychology
- SOC 10000 - Introductory Sociology

##### **Additional Credits (3 Credits)**

Any 10000 level History course

##### **First-Year Experience (FYE) (1 Credit)**

- BHS 10300 - Freshman Experience In Behavioral Sciences

##### **Major Core (48 Credits)**

- CRJU 15000 - Introduction To The Criminal Justice System
- SOC 22000 - Social Problems
- SOC 38200 - Introduction To Statistics In Sociology
- CRJU 24000 - Introduction To Corrections

- CRJU 23000 - Introduction To Law Enforcement
- CRJU 30700 - Victimology
- SOC 38300 - Introduction To Research Methods In Sociology
- SOC 32400 - Criminology  
or
- CRJU 32400 - Criminology
- SOC 31400 - Race And Ethnic Relations or SOC 41100 Social Stratification
- SOC 44300 - Field Experience In Criminal Justice
- SOC 40200 - Sociological Theory
- Sociology/Criminal Justice – B4 Credit Hours: 12.00
- SOC 42100 - Juvenile Delinquency /**CRJU 42100** Juvenile Delinquency

### Other Required Courses (38 Credits)

- POL 10100 - American Government And Politics
- ECON 10100 - Survey Of Economics

### Foreign Language (12 Credits)

Spanish, French, German, or Japanese. Must complete 4 semesters of the same foreign language

### Aesthetics (3 Credits)

The Department of Behavioral Sciences accepts the following:

- AD 25500 - Art Appreciation
- ENGL 31900 - Creative Writing
- ENGL 38600 - History Of Film To 1938
- ENGL 28600 - The Movies
- MUS 25000 - Music Appreciation
- PHIL 10600 - Human Experience In Art Literature, Music, And Philosophy
- THTR 20100 - Theatre Appreciation

### Philosophy (3 Credits)

Any 10000 level PHIL course, except PHIL 15000

### Electives (14 Credits)

Free Electives/Minor

## Total 120 Credits Required

## Master of Science

## Child Development and Family Studies, Human Development and Family Studies, MS

### Program Requirements

#### Common Core

- CDFS 60200 - Advanced Family Studies
- CDFS 61500 - Research Methods In Child And Family Study
- CDFS 61800 - Program Development And Evaluation
- CDFS 59000 - Special Problems (Current Research Topics in Child Development and Family Studies)
- PSY 60500 - Applied Multivariate Analysis
- CDFS 59000 - Special Problems (Administration of Social Service Non-for-Profit Agencies)
- CDFS 68000 - Professional Issues For Child And Family Specialists
- CDFS 59000 - Special Problems (6-hours of Directed Research)

## Electives

Nine credit hours at the 40000-60000 level. Electives must represent one of the specialties listed below:

- Early Childhood Development Area
- Child & Family Studies Area
- Disabilities Studies Area
- Gerontology Area

**Completed Directed Research Project and Oral Defense**

**Total 36 Credits Required**

## **Child Development and Family Studies, Marriage and Family Therapy, MS**

Accredited by the Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE).

### **Special Admission Requirements**

- 1000-word autobiographical statement demonstrating that the student has adequate preparation.
- Combined verbal and math Graduate Record Examination score of 300.

### **Program Requirements**

#### **Required Courses**

- CDFS 59000 - Special Problems (Couple and Sex Therapy)
- CDFS 60100 - Advanced Child Development
- CDFS 59000 - Special Problems (Diversity and Social Justice in Family Therapy)
- CDFS 61500 - Research Methods In Child And Family Study
- CDFS 65700 - Social Constructionist Family Therapies
- CDFS 66000 - Family Therapy Skills
- CDFS 66300 - Structural And Strategic Family Therapies
- CDFS 66500 - Transgenerational And Specialized Family Therapies
- CDFS 66900 - Practicum In Family Therapy (6 semesters)
- CDFS 59000 - Special Problems (Contemporary Issues in Family Therapy)
- CDFS 68000 - Professional Issues For Child And Family Specialists
- CDFS 69800 - Research MS Thesis (6 credits)
- PSY 60500 - Applied Multivariate Analysis
- CDFS 59000 - Special Problems (Behavior Disorders)
- CDFS 59000 - Special Problems (Children in Family Therapy)
- CDFS 64100 - Trauma And Recovery In Family Therapy

#### **Additional Requirements**

- 500 hours of face-to-face contact with clients
- 100 hours of supervision
- Completed written thesis and oral defense of thesis

**Total 67 Credits Required**

### **Post-Baccalaureate Certificate**

#### **Early Childhood Development Post-Baccalaureate Certificate**

#### **Early Childhood Development Post-Baccalaureate Certificate**

This certificate is available to students with baccalaureate degrees who are already working with young children, either as family child care providers, or in various center-based capacities, including teaching or administration. It will provide immediate and substantial support to providers coming to the field from other areas of study. The certificate

includes coursework in child development, observation and curriculum preparation, and requires supervised practical experience.

## Program Requirements

### Core Requirements

- PSY 36100 - Human Development I: Infancy And Childhood  
or
- HDFS 42100 - Children's Social Development (elective)  
or
- HDFS 43101 - Techniques Of Human Assessment (elective)
  
- HDFS 21600 - Introduction To Early Childhood Education  
or
- HDFS 22800 - Developmental Infant And Toddler Care (elective)  
or
- HDFS 43101 - Techniques Of Human Assessment (elective)
  
- HDFS 21700 - Issues In Early Childhood Education  
or
- HDFS 42100 - Children's Social Development (elective)  
or
- HDFS 22800 - Developmental Infant And Toddler Care (elective)  
or
- HDFS 34000 - Teaching Very Young Children With Special Needs (elective)
  
- HDFS 30800 - Language And Literature In Early Childhood
- HDFS 47000 - Supervised Experience In Early Childhood Programs

### For Acting Administrators

- PSY 36100 - Human Development I: Infancy And Childhood  
or
- HDFS 42100 - Children's Social Development (elective)  
or
- HDFS 43101 - Techniques Of Human Assessment (elective)
  
- HDFS 21600 - Introduction To Early Childhood Education  
or
- HDFS 30501 - Art, Music And Movement In Early Childhood (elective)  
or
- HDFS 22800 - Developmental Infant And Toddler Care (elective)  
or
- HDFS 43101 - Techniques Of Human Assessment (elective)
  
- HDFS 21700 - Issues In Early Childhood Education  
or
- HDFS 42100 - Children's Social Development (elective)  
or
- HDFS 22800 - Developmental Infant And Toddler Care (elective)
  
- HDFS 30800 - Language And Literature In Early Childhood
- HDFS 33201 - Child Care Administration

- HDFS 47000 - Supervised Experience In Early Childhood Programs

### For Family Childcare Providers

- PSY 36100 - Human Development I: Infancy And Childhood  
or
- HDFS 42100 - Children's Social Development (elective)  
or
- HDFS 43101 - Techniques Of Human Assessment (elective)
- HDFS 21600 - Introduction To Early Childhood Education  
or
- HDFS 30501 - Art, Music And Movement In Early Childhood  
or
- HDFS 22800 - Developmental Infant And Toddler Care
- HDFS 21700 - Issues In Early Childhood Education  
or
- HDFS 42100 - Children's Social Development (elective)  
or
- HDFS 22800 - Developmental Infant And Toddler Care (elective)
- HDFS 30800 - Language And Literature In Early Childhood
- HDFS 31001 - Math, Science, And Social Studies In Early Childhood
- HDFS 47000 - Supervised Experience In Early Childhood Programs

### Possible Electives

- HDFS 42100 - Children's Social Development
- HDFS 30501 - Art, Music And Movement In Early Childhood
- HDFS 43101 - Techniques Of Human Assessment (ExL)
- HDFS 22800 - Developmental Infant And Toddler Care
- HDFS 34000 - Teaching Very Young Children With Special Needs

### Total 18 Credits Required

Note: Some students may already have coursework that approximates that of some required courses. Alternative courses should enrich the student's familiarity with the topics or issues addressed in the required courses. Alternative courses must be chosen in consultation with program advisors.

## Minor

### Gender Studies Minor

#### Course Requirements (15 Credit Hours)

##### Required Course (3 Credits)

- IDIS 10600 - Introduction To Gender Studies

##### Elective Courses (12 Credits)

**Students must complete four Advanced Courses in Gender Studies from at least two different disciplines, with at least one each at the 30000-level and 40000-level:**

- Selected Gender Studies course 20000-level or above\*
- Selected Gender Studies course 20000-level or above\*
- Selected Gender Studies course 30000-level or above\*
- Selected Gender Studies course 40000-level or above\*

\* Students may choose from the following approved courses:

- ANTH 23000 - Gender Across Cultures

- PSY 23900 - The Psychology Of Women
- COM 37600 - Communication And Gender
- ENGL 31100 - Identity In Ethnic American Women's Literature
- ENGL 36000 - Gender And Literature
- HIST 36500 - Women In America
- SOC 31501 - Gender In Society
- SOC 31700 - Sociology Of Sex And Sexualities
- SOC 35000 - Social Psychology Of Marriage
- SOC 36500 - Constructing American Families
- SOC 37300 - Gender And Interaction
- FLL 49000 - Special Topics In Foreign Languages And Literatures (*by approval*)
- GBG 45000 - Women In Business
- OLS 45400 - Gender And Diversity In Management
- PHIL 40800 - Philosophy Of Love And Friendship
- WOST 20800 - Nutrition in Women's Health
- IDIS 38000 - Gender And Multiculturalism
- IDIS 48200 - Interdisciplinary Studies In Sexuality: Scholarship On Lesbian And Gay Issues
- Other variable topics courses in gender approved by the advisor

## **Gerontology Minor**

### **Course Requirements (18 Credit Hours)**

#### **Required Courses (15 Credits)**

- HDFS 37500 - Physical Aging, Health, And Behavior
- SOC 43000 - Sociology Of Aging
- SOC 43100 - Services For The Aged
- SOC 46000 - Field Experience In Gerontology
- PSY 36300 - Human Development III: Adulthood

#### **Elective Course (3 Credits)**

##### **Choose One:**

- COM 36500 - Communication And Aging
- COM 37100 - Health Communication
- FN 36000 - Nutrition For The Aging
- PSY 49100 - Topics In Psychology
- PSY 53500 - Psychology Of Death And Dying
- SOC 44000 - Sociology Of Health And Illness
- SOC 49100 - Topics In Sociology

## **HDFS, Early Childhood Minor**

### **Course Requirements (18 Credit Hours)**

#### **Required Courses (15 Credits)**

- HDFS 10100 - Working With Parents
- HDFS 21600 - Introduction To Early Childhood Education
- HDFS 21700 - Issues In Early Childhood Education
- HDFS 43101 - Techniques Of Human Assessment
- PSY 36100 - Human Development I: Infancy And Childhood

#### **Elective Course (3 Credits)**

##### **Choose One:**

- HDFS 22800 - Developmental Infant And Toddler Care
- HDFS 34000 - Teaching Very Young Children With Special Needs
- HDFS 35001 - Internship In Early Childhood Settings
- HDFS 42100 - Children's Social Development
- PSY 35500 - Child Abuse And Neglect

## **Human Services Minor**

### **Course Requirements (18 Credit Hours)**

#### **Required Courses (15 Credits)**

- SOC 22000 - Social Problems
- SOC 26100 - Basic Helping Skills For Human Services
- SOC 30600 - Methods In Human Services
- SOC 30700 - Field Experience In Human Services
- SOC 36400 - Child And Family Welfare

#### **Elective Course (3 Credits)**

- PSY 35500 - Child Abuse And Neglect
- SOC 31400 - Race And Ethnic Relations
- SOC 36100 - The Institution Of Social Welfare
- SOC 41100 - Social Stratification
- SOC 42100 - Juvenile Delinquency
- SOC 43000 - Sociology Of Aging
- SOC 45000 - Gender Roles In Modern Society

## **Sociology Minor**

Minimum credits required for the Minor in Sociology is 15. For all courses in the SOC minor: (1) a minimum grade of "C" is required in order for a course to count toward credit for earning the Sociology Minor, (2) a student may only repeat a SOC course counting toward the Minor a maximum of two times, including all withdrawals and (3) no SOC course counting toward the Minor may be taken as Pass/No Pass.

This Minor can be attached to any Major at Purdue North Central whose department will allow it. The Sociology Minor may not be pursued by students who complete the Sociology Option for the Bachelor in Behavioral Sciences degree.

### **Course Requirements (15 Credit Hours)**

#### **Required Courses (6 Credits)**

- SOC 10000 - Introductory Sociology
- SOC 22000 - Social Problems

#### **Elective Courses (9 Credits)**

Students must complete at least three (3) Advanced Courses in Sociology at the 30000-level or higher.

## **Department of Communication and Creative Arts**

### **Bachelor of Arts**

### **Communication, BA, Concentration: Visual Communication Design**

#### **Degree Requirements**

#### **PNW General Education Core (30 Credits Minimum)**

#### **English Composition (6 Credits)**

- ENGL 10400 - English Composition I

- ENGL 10500 - English Composition II

### **Speech Communication (3 Credits)**

- COM 11400 - Fundamentals Of Speech Communication

### **Quantitative Reasoning (3 Credits)**

- STAT 13000 - Statistics And Contemporary Life

### **Natural Sciences (3 Credits)**

Any Science Core course with Lab

### **Technology (3 Credits)**

- CIS 20400 - Introduction To Computer-Based Systems

### **Humanities (3 Credits)**

Select from the Humanities Core list

### **Social Sciences (3 Credits)**

- SOC 10000 - Introductory Sociology

### **Additional Credits (3 Credits)**

- FN 30300 - Essentials Of Nutrition
- or any Science, MA, STAT, or CIS course

### **First-Year Experience (3 Credits)**

- COM 10300 - The Freshman Seminar In Communication

### **Supplemental Core (24 Credits)**

- PSY 12000 - Elementary Psychology

### **Aesthetics (3 Credits)**

### **Economics (3 Credits)**

- ECON 10100 - Survey Of Economics

### **History (3 Credits)**

### **Literature (3 Credits)**

### **Modern Language (12 Credits)**

Credit in the fourth semester required.

### **Political Science (3 Credits)**

- POL 10100 - American Government And Politics

### **Major Core (51 Credits)**

- AD 10500 - Design I
- AD 10600 - Design II
- COM 25000 - Mass Communication And Society
- AD 11300 - Basic Drawing
- COM 20400 - Critical Perspectives On Communication
- AD 22200 - Introduction to Photography
- AD 11200 - Graphic Arts I: Typography
- AD 20400 - Graphic Arts II: Digital
- AD 30102 - Color And Composition
- COM 30900 - Visual Communication
- AD 32800 - Visual Communication Design I
- CGT 21600 - Vector Imaging For Computer Graphics
- AD 32900 - Visual Communication Design II
- AD 44800 - Visual Communication Design III
- CGT 35300 - Principles Of Interactive And Dynamic Media



- AD 44900 - Visual Communication Design IV
- AD 40300 - Portfolio Process And Presentation

### Other Required Courses (9 Credits)

### Communication Electives (6 Credits)

Any upper division COM or AD courses (30000 or above) can be used toward the Communication Elective.

### Free Elective (3 Credits)

### Total 120 Credits Required

## **Communication, BA, Concentrations: Advertising, Broadcasting, International Communication, Journalism, Media, Media Studies, or Public Relations**

The Communication degree offers students the opportunity to prepare for a wide range of careers where effective oral and written communication is essential. By combining a study of communication theory and research with an emphasis on performance, communication majors will see improvement in critical thinking, research, writing, team, interpersonal, and public speaking skills. Graduates of the program may find work in such diverse areas as organizational training and development, broadcasting and public relations. Internship opportunities are available to students that will allow them to network with professionals while continuing to build their communication skills.

**Students may choose to complete one concentration from the following areas:**

- Advertising
- Broadcasting
- International Communication
- Journalism
- Media
- Media Studies
- Public Relations
- Visual Communication (For program information, see Communication, BA, Concentration: Visual Communication Design)

### Degree Requirements

### PNW General Education Core (30 Credits Minimum)

#### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

#### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

#### Quantitative Reasoning (3 Credits)

- STAT 13000 - Statistics And Contemporary Life

#### Natural Sciences (3 Credits)

Any Science Core course with Lab

#### Technology (3 Credits)

- CIS 20400 - Introduction To Computer-Based Systems

#### Humanities (3 Credits)

Select from the Humanities Core list

#### Social Sciences (3 Credits)

- SOC 10000 - Introductory Sociology

#### Additional Credits (3 Credits)

- FN 30300 - Essentials Of Nutrition
- or any Science, MA, STAT, or CIS course

### **First-Year Experience (3 Credits)**

- COM 10300 - The Freshman Seminar In Communication

### **Supplemental Core (30 Credits)**

- PSY 12000 - Elementary Psychology

### **Modern Language (12 Credits)**

Credit in the fourth semester required.

### **History (3 Credits)**

### **Economics (3 Credits)**

- ECON 10100 - Survey Of Economics

### **Literature (3 Credits)**

### **Political Science (3 Credits)**

- POL 10100 - American Government And Politics

### **Aesthetics (3 Credits)**

### **Major Core (15 Credits)**

- COM 20400 - Critical Perspectives On Communication
- COM 25000 - Mass Communication And Society
- COM 30000 - Introduction To Communication Research Methods
- COM 31800 - Principles Of Persuasion
- COM 43500 - Communication And Emerging Technologies

### **Other Required Courses (45 Credits)**

### **Communication Electives (18-27 Credits)**

Choose courses with emphasis in an identified career path or concentration. Seven (7) electives in communication are required for major. At least four of those electives must be upper division (UD) at 30000 level or above. At least two of those UD courses must be COM EXL courses. Prerequisites may apply.

### **Advertising Concentration**

To receive a concentration in Advertising in our B.A. in Communication program, students must complete:

- COM 25300 - Introduction To Public Relations
- COM 25600 - Introduction To Advertising
- COM 30900 - Visual Communication
- COM 33100 - Audio Production
- COM 33200 - Television Production
- COM 43400 - Practicum In Radio and Television
- COM 43900 - Focus Group Research

### **Broadcasting Concentration**

To receive a concentration in Broadcasting in our B.A. in Communication program, students must complete:

- COM 30900 - Visual Communication
- COM 33100 - Audio Production
- COM 33200 - Television Production
- COM 43400 - Practicum In Radio and Television
- COM 43600 - Script Writing
- COM 44100 - Advanced Television Production
- COM 44500 - Television Editing

### **International Communication Concentration**

To receive a concentration in International Communication in our B.A. in Communication program, students must complete:

- COM 30101 - Political Economy Of Global Media
- COM 30102 - Media Globalization And Development
- COM 32700 - International Communications
- COM 33000 - Theories Of Mass Communication
- COM 34900 - Media And Culture
- COM 35000 - Intercultural Communication

### Journalism Concentration

To receive a concentration in Journalism in our B.A. in Communication program, students must complete:

- COM 25500 - Introduction To News Reporting And Writing
- COM 30500 - News Editing
- COM 30600 - Advanced News Reporting And Writing
- COM 30900 - Visual Communication
- COM 33000 - Theories Of Mass Communication
- COM 33400 - Journalism For The Electronic Mass Media
- COM 34201 - Introduction To Broadcast News
- COM 40300 - Communication Ethics

- COM 45100 - Feature Writing

or

- COM 45200 - Practicum In Journalism

### Media Concentration

To receive a concentration in Media in our B.A. in Communication program, students must complete:

- COM 25200 - Writing For Mass Media
- COM 26100 - Introduction To Digital Video Production
- COM 35100 - Mass Communication Ethics
- COM 35200 - Mass Communication Law

**Choose two of the following electives:**

- COM 31200 - Rhetoric In The Western World
- COM 33000 - Theories Of Mass Communication
- COM 33200 - Television Production
- COM 49000 - Internship In Communication
- COM 49100 - Special Topics In Communication

### Media Studies Concentration

To receive a concentration in Media Studies in our B.A. in Communication program, students must complete:

- COM 30101 - Political Economy Of Global Media
- COM 33000 - Theories Of Mass Communication
- COM 34201 - Introduction To Broadcast News
- COM 34900 - Media And Culture
- COM 46300 - Mass Media Criticism
- COM Elective 30000+ with Media Focus

### Public Relations Concentration

To receive a concentration in Public Relations in our B.A. in Communication program, students must complete:

- COM 25300 - Introduction To Public Relations
- COM 25500 - Introduction To News Reporting And Writing
- COM 31800 - Principles Of Persuasion
- COM 32500 - Interviewing: Principles And Practice

- COM 35300 - Problems In Public Relations
- COM 46000 - Advanced Public Relations

### Free Electives (18-27 Credits)

### Total 120 Credits Required

## Master of Arts

## Communication, MA

The Master's degree program within the Department of Communication and Creative Arts at Purdue University Calumet offers a broad range of courses covering theories and research methodologies in the following areas: mass communication, interpersonal communication, organizational communication, performance studies, political communication, and rhetoric. The program is highly flexible and allows each graduate student to plan his/her course of study in consultation with a graduate faculty or advisor. After admission into the program, students will meet with advisor to determine their course of study based on their interests and professional goals.

The program was originally designed to meet the needs of individuals who live and work in northwest Indiana and who want to complete advanced courses of study in communication studies. Today, a diverse student body--including international--is enrolled in the program. Numerous graduate students have successfully completed the program to qualify for career advancement, to prepare for doctoral study, or to satisfy their own curiosity about the most fundamental human behavior: Communication.

## Program Requirements

### Required Courses (3 Credits)

- COM 58200 - Descriptive/Experimental Research In Communication  
or
- COM 58400 - Historical/Critical Research In Communication

### Theory (9 Credits)

Nine (9) hours of THEORY from the courses listed below:

- COM 50800 - Nonverbal Communication In Human Interaction
- COM 51200 - Theories Of Interpersonal Communication
- COM 51700 - Communication In Politics
- COM 51800 - Theories Of Persuasion
- COM 52000 - Small Group Communication
- COM 52100 - Theories Of Rhetoric
- COM 53400 - Comparative Telecommunication Systems
- COM 54500 - Theories Of Oral Interpretation
- COM 56000 - Rhetorical Dimension Of Mass Media
- COM 57400 - Organizational Communication
- COM Elective - Communication Elective \*

### Research Methods/Application (9 Credits)

Nine (9) hours of RESEARCH METHODS/APPLICATION from courses listed below:

- COM 51500 - Persuasion In Social Movements
- COM 52500 - Advanced Interviewing And Conference Methods
- COM 53100 - Special Topics In Mass Communication
- COM 53300 - Documentary Television
- COM 53600 - Radio & Television Writing
- COM 54000 - Advanced Oral Interpretation
- COM 55900 - Current Trends In Mass Communication Research
- COM 58300 - Research And Assessment In Organizational Communication
- COM Elective - Communication Elective\*

## Communication Electives

\*Depending on the topic and approach, the following courses could fulfill requirements in the above categories. Students need to get the Graduate Director's approval to count one of the following as either Theory or Research:

- COM 61200 - Seminar: Special Topics In Interpersonal Communication
- COM 62100 - Seminar: Special Topics In Rhetorical Theory
- COM 63200 - Seminar: Special Topics In Mass Communication
- COM 67400 - Seminar: Special Topics In Organizational Communication

## Electives (15 Credits)

Fifteen (15) hours of ELECTIVE coursework – Note: No more than 9 hours may be taken outside the department, no more than 6 hours Directed Study courses. Two 400-level COM courses may be taken for graduate elective credit.

## Advisor Selection/Examination Committee

1. Upon completion of 9 credit hours, student must select a graduate faculty mentor/advisor (examination committee chair).
2. The student and the advisor will plan a course of study for the remaining 27 credit hours.
3. Prior to the completion of the 24th credit hour, students must select two remaining committee members for their advisory committees.
4. The student and the committee will discuss and determine an appropriate graduation examination format. Usual options include: Comprehensive Exams; Conference Quality Paper; Performance/Creative Project; Thesis

## Transfer of Credits

No more than 9 credits (3 courses) from other accredited institutions, taken within 10 years prior to completion of degree program, may be accepted at the discretion of the Department.

## Total 36 Credits Required

### Minor

## Advertising, Communication Minor

### Course Requirements (18 Credit Hours)

#### Required Courses (12 Credits)

- COM 25600 - Introduction To Advertising
- COM 30900 - Visual Communication
- COM 33100 - Audio Production
- COM 43400 - Practicum In Radio and Television

#### Elective Courses (6 Credits)

Choose Two:

- COM 25000 - Mass Communication And Society
- COM 25300 - Introduction To Public Relations
- COM 31800 - Principles Of Persuasion
- COM 33000 - Theories Of Mass Communication
- COM 33200 - Television Production
- COM 43900 - Focus Group Research
- COM 44300 - Advertising Media
- COM 46500 - Visual Aesthetics In Television And Film

### Broadcasting Minor

### Course Requirements (18 Credit Hours)

#### Required Courses (12 Credits)

- COM 30900 - Visual Communication

- COM 33100 - Audio Production
- COM 33200 - Television Production
- COM 44100 - Advanced Television Production

### **Elective Courses (6 Credits)**

#### **Choose Two:**

- COM 25000 - Mass Communication And Society
- COM 33000 - Theories Of Mass Communication
- COM 34201 - Introduction To Broadcast News
- COM 34700 - Radio And Television Performance
- COM 43600 - Script Writing
- COM 44500 - Television Editing
- COM 46500 - Visual Aesthetics In Television And Film

## **Communication Studies Minor**

### **Course Requirements (18 Credit Hours)**

#### **Required Courses (12 Credits)**

- COM 22500 - Introduction To Rhetoric And Social Influence
- COM 22800 - Introduction To Communication Studies
- COM 25000 - Mass Communication And Society
- COM 30000 - Introduction To Communication Research Methods

#### **Elective Courses (6 Credits)**

Any two COM 30000/40000 level courses

## **Health Communication Minor**

### **Course Requirements (18 Credit Hours)**

#### **Required Courses (12 Credits)**

- COM 21400 - Comparative Theories Of Interpersonal Communication
- COM 36500 - Communication And Aging
- COM 37100 - Health Communication
- COM 40300 - Communication Ethics

#### **Elective Courses (6 Credits)**

- COM 31000 - Family Communication
- COM 31800 - Principles Of Persuasion
- SOC 44000 - Sociology Of Health And Illness
- PSY 53500 - Psychology Of Death And Dying

## **International Communication Minor**

### **Course Requirements (18 Credit Hours)**

#### **Required Courses (12 Credits)**

- COM 25000 - Mass Communication And Society
- COM 32700 - International Communications
- COM 35000 - Intercultural Communication
- COM 30101 - Political Economy Of Global Media  
or
- COM 30102 - Media Globalization And Development

## Elective Courses (6 Credits)

- COM 30101 - Political Economy Of Global Media  
or
- COM 30102 - Media Globalization And Development
  
- COM 33000 - Theories Of Mass Communication
- COM 34900 - Media And Culture
- Any 50000 level course in International Media

## Journalism Minor

### Course Requirements (18 Credit Hours)

#### Required Courses (12 Credits)

- COM 25000 - Mass Communication And Society
- COM 25500 - Introduction To News Reporting And Writing
- COM 30500 - News Editing
- COM 30600 - Advanced News Reporting And Writing

#### Elective Courses (6 Credits)

##### Choose Two:

- COM 25300 - Introduction To Public Relations
- COM 30200 - Publications Design
- COM 32500 - Interviewing: Principles And Practice
- COM 33000 - Theories Of Mass Communication
- COM 33400 - Journalism For The Electronic Mass Media
- COM 34201 - Introduction To Broadcast News
- COM 35200 - Mass Communication Law
- COM 40300 - Communication Ethics
- COM 45100 - Feature Writing
- COM 45200 - Practicum In Journalism
- ENGL 40600 - Review Writing

## Media and Culture Minor

### Course Requirements (18 Credit Hours)

#### Required Courses (12 Credits)

- COM 25000 - Mass Communication And Society
- COM 33000 - Theories Of Mass Communication
- COM 34900 - Media And Culture
- COM 46300 - Mass Media Criticism

#### Elective Courses (6 Credits)

##### Choose Two:

- COM 22500 - Introduction To Rhetoric And Social Influence
- COM 31800 - Principles Of Persuasion
- COM 32700 - International Communications
- COM 35000 - Intercultural Communication
- COM 42600 - Identity And Communication
- COM 47000 - Women In The Media
- COM 47500 - Identity In Film

## **Organizational Communication Minor**

### **Course Requirements (15 Credit Hours)**

#### **Required Courses (9 Credits)**

- COM 32000 - Small Group Communication
- COM 32500 - Interviewing: Principles And Practice
- COM 42000 - Introduction To Organizational Communication

#### **Elective Courses (6 Credits)**

- COM 21400 - Comparative Theories Of Interpersonal Communication
- COM 30000 - Introduction To Communication Research Methods
- COM 31800 - Principles Of Persuasion
- COM 32200 - Leadership In Organization
- COM 32300 - Business And Professional Speaking

## **Public Relations Minor**

### **Course Requirements (18 Credit Hours)**

#### **Required Courses (12 Credits)**

- COM 25300 - Introduction To Public Relations
- COM 25500 - Introduction To News Reporting And Writing
- COM 35300 - Problems In Public Relations
- COM 46000 - Advanced Public Relations

#### **Elective Courses (6 Credits)**

##### **Choose Two:**

- AD 22200 - Introduction to Photography
- COM 22500 - Introduction To Rhetoric And Social Influence  
or
- COM 31900 - The Rhetorical Tradition
- COM 25000 - Mass Communication And Society
- COM 30500 - News Editing
- COM 30600 - Advanced News Reporting And Writing
- COM 31800 - Principles Of Persuasion
- COM 32500 - Interviewing: Principles And Practice
- COM 33000 - Theories Of Mass Communication
- COM 34201 - Introduction To Broadcast News
- COM 40300 - Communication Ethics
- COM 43900 - Focus Group Research

## **Theater Minor**

### **Course Requirements (18 Credit Hours)**

#### **Required Courses (12 Credits)**

- THTR 13800 - Acting I
- THTR 20100 - Theatre Appreciation
- THTR 23800 - Acting II
- COM 34300 - Fundamentals Of Oral Interpretation

#### **Elective Courses (6 Credits)**



**Choose Two:**

- COM 21300 - Voice And Diction
- THTR 16800 - Theatre Production I
- COM 34700 - Radio And Television Performance
- COM 43600 - Script Writing
- COM 43700 - Performance Practicum
- ENGL 38300 - Modern Drama: Ibsen To The Absurdist

**Visual Communication & Graphic Arts Minor****Course Requirements (18 Credit Hours)****Required Courses (6 Credits)**

- AD 10500 - Design I
- AD 10600 - Design II

**Elective Courses (12 Credits)****Choose Four:**

- AD 11200 - Graphic Arts I: Typography
- AD 20400 - Graphic Arts II: Digital
- AD 30102 - Color And Composition
- AD 32800 - Visual Communication Design I
- AD 32900 - Visual Communication Design II

**Women's, Gender, and Sexuality Studies Minor****Course Requirements (15 Credit Hours)****Required Course (3 Credits)**

**WGSS 28000** Introduction to Women's, Gender, and Sexuality Studies\* *Credit Hours: 3.00*

\*This course is a prerequisite for other offerings in this program

**Elective Courses (12 Credits)****Four (4) courses in Women's Studies:**

- WGSS/ENGL 31200** Ethnic American Women Writers *Credit Hours: 3.00*  
**WGSS/ENGL 31300** African American Women's Fiction *Credit Hours: 3.00*  
**WGSS/ENGL 32000** By And About Women *Credit Hours: 3.00*  
**WGSS/ENGL 32300** Sexual Identity In Literature *Credit Hours: 3.00*  
**WGSS/ENGL 32400** International Women's Literature *Credit Hours: 3.00*  
**WGSS/ENGL 34000** Literature By Women Of Color *Credit Hours: 3.00*  
**WGSS/ENGL 33600** Mothers and Daughters in Literature *Credit Hours: 3.00*  
**WGSS/F&N 20800** Nutrition In Women's Health *Credit Hours: 3.00*  
**WGSS/COM 40500** The Rhetoric of Women's Rights *Credit Hours: 3.00*  
**WGSS/COM 47000** Women In The Media *Credit Hours: 3.00*  
**WGSS/HIST 36500** Women In America *Credit Hours: 3.00*  
**WGSS/PSY 34900** Psychology Of Women *Credit Hours: 3.00*  
**WGSS/SOC 35000** Social Psychology Of Marriage *Credit Hours: 3.00*  
**WGSS/SOC 45000** Sex Roles In Modern Society *Credit Hours: 3.00*  
**WGSS 28200** Introduction To LGBT Studies *Credit Hours: 3.00*  
**WGSS 38000** Gender And Multiculturalism *Credit Hours: 3.00*  
**WGSS 38100** Women Of Color In The United States *Credit Hours: 3.00*  
**WGSS 38300** Women And Work *Credit Hours: 3.00*  
**WGSS 48000** Feminist Theory *Credit Hours: 3.00*  
**WGSS 48200** Interdisciplinary Studies In Sexuality: Scholarship On Lesbian And Gay Issues *Credit Hours: 3.00*  
**WGSS 48300** Global Feminisms *Credit Hours: 3.00*  
**WGSS 49200** Practicum In WGSS *Credit Hours: 3.00*

# Department of English

## Bachelor of Arts

### English, BA, Concentration: English Literature

#### Degree Requirements

#### PNW General Education Core (30 Credits Minimum)

##### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

##### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

##### Quantitative Reasoning (3 Credits)

Select from the Quantitative Reasoning Core list

##### Natural Sciences (3 Credits)

Natural Sciences Course with Lab - Select from Core list

##### Technology (3 Credits)

Select from Technology Core List

##### Humanities (3 Credits)

Select from the Humanities Core list

##### Social Sciences (6 Credits)

- PSY 12000 - Elementary Psychology
- SOC 10000 - Introductory Sociology  
or
- ANTH 10500 - Cultural Anthropology

##### First-Year Experience (FYE) (3 Credits)

- PHIL 10700 - Freshman Experience -English & Philosophy

##### Supplemental Core (30 Credits)

- Foreign Language (12 Credits)
  - Credit in the fourth semester required
- History (3 Credits)
- Philosophy (3 Credits)
- Aesthetics (3 Credits)
- Political Science (3 Credits)
- Economics (3 Credits)
- Literature (3 Credits)
- Additional Math or Science (3 Credits)

##### Major Core (60 Credits)

##### English Literature Concentration Requirement (36 Credits)

###### Must take 12 courses

Pre/Co-requisite(s): ENGL 10000 or ENGL 10400 or ENGL 10800 and/or ENGL 20100

- ENGL 20100 - The Nature Of Literary Study (recommended to be taken before any literature courses)
- Choose any 30000 or above literature course

##### Survey Courses

Survey courses should be taken in Freshmen/Sophomore years. Choose one from each category:

- ENGL 24000 - Survey Of The British Literature: From The Beginnings Through The Neoclassical Period (m)  
or
- ENGL 24100 - Survey Of The British Literature: From The Rise Of Romanticism To The Modern Period (m)
- ENGL 26000 - Introduction To World Literature: To 1700  
or
- ENGL 26100 - Introduction To World Literature: Since 1700
- ENGL 35000 - Survey Of American Literature From Its Beginnings To 1865  
or
- ENGL 35100 - Survey Of American Literature From 1865 To The Post-World War II Period

### Author Studies

Choose one:

- ENGL 41100 - Studies In Major Authors (may also be taken to satisfy the JR/SR seminar if the course features a different author.)
- ENGL 44100 - Chaucer's Canterbury Tales
- ENGL 44200 - Shakespeare
- ENGL 44400 - Milton

### Theory

Should be taken in Senior year.

- ENGL 40300 - Literary Theory  
or
- ENGL 46900 - Issues In Contemporary Criticism And Theory

### Choose One Junior/Senior Seminar From:

Should be taken in Junior/Senior years.

- ENGL 41100 - Studies In Major Authors
- ENGL 41200 - Studies In Genre
- ENGL 41300 - Studies In Literature And History
- ENGL 41400 - Studies In Literature And Culture

### Choose One Genre Course

- ENGL 23800 - Introduction To Fiction
- ENGL 26400 - The Bible As Literature
- ENGL 28600 - The Movies
- ENGL 31000 - Introduction To Popular Culture
- ENGL 31300 - African American Women's Fiction
- ENGL 31800 - Graphic Narrative
- ENGL 32000 - By And About Women
- ENGL 32500 - International Short Story
- ENGL 35600 - American Humor
- ENGL 37300 - Science Fiction And Fantasy
- ENGL 37500 - British Drama To 1800, Exclusive Of Shakespeare
- ENGL 37700 - Major Modern Poetry
- ENGL 37900 - The Short Story
- ENGL 38100 - The British Novel
- ENGL 38200 - The American Novel
- ENGL 38300 - Modern Drama: Ibsen To The Absurdist
- ENGL 41200 - Studies In Genre

- ENGL 47900 - The Short Story
- ENGL 49200 - Literature In The Secondary Schools
- THTR 34800 - Dramatic Performance In Context

### Choose One Historical Course

- ENGL 24000 - Survey Of The British Literature: From The Beginnings Through The Neoclassical Period
- ENGL 24100 - Survey Of The British Literature: From The Rise Of Romanticism To The Modern Period
- ENGL 25700 - Literature Of Black America
- ENGL 26000 - Introduction To World Literature: To 1700
- ENGL 26100 - Introduction To World Literature: Since 1700
- ENGL 26200 - Greek And Roman Classics In Translation
- ENGL 26600 - World Literature: From The Beginnings To 1700 A.D.
- ENGL 26700 - World Literature: From 1700 A.D. To The Present
- ENGL 31100 - Identity In Ethnic American Women's Literature
- ENGL 32700 - English Language I: History And Development
- ENGL 33100 - Medieval English Literature
- ENGL 33300 - Renaissance English Literature
- ENGL 33500 - Restoration And Eighteenth-Century English Literature
- ENGL 33700 - Nineteenth-Century English Literature
- ENGL 33900 - Twentieth-Century British Literature
- ENGL 35000 - Survey Of American Literature From Its Beginnings To 1865
- ENGL 35100 - Survey Of American Literature From 1865 To The Post-World War II Period
- ENGL 35500 - African American Literature Slavery To 1940
- ENGL 36600 - Postcolonial Literatures
- ENGL 37000 - Nineteenth-Century American Literature
- ENGL 37100 - Twentieth-Century American Literature
- ENGL 37500 - British Drama To 1800, Exclusive Of Shakespeare
- ENGL 37700 - Major Modern Poetry
- ENGL 38100 - The British Novel
- ENGL 38200 - The American Novel
- ENGL 38300 - Modern Drama: Ibsen To The Absurdist
- ENGL 38600 - History Of Film To 1938
- ENGL 38700 - History Of The Film From 1938 To The Present
- ENGL 41300 - Studies In Literature And History
- ENGL 46200 - The Bible As Literature: The Old Testament
- ENGL 46300 - The Bible As Literature: The New Testament
- ENGL 46800 - Problems In The History Of Criticism

### Choose One Cultural Course

- ENGL 25700 - Literature Of Black America
- ENGL 28600 - The Movies
- ENGL 31000 - Introduction To Popular Culture
- ENGL 31100 - Identity In Ethnic American Women's Literature
- ENGL 31200 - Ethnic American Women Writers
- ENGL 31800 - Graphic Narrative
- ENGL 32000 - By And About Women
- ENGL 32300 - Sexual Identity In Literature
- ENGL 32400 - International Women's Literature
- ENGL 33600 - Mothers And Daughters In Literature

- ENGL 34000 - Literature By Women Of Color
- ENGL 35500 - African American Literature Slavery To 1940
- ENGL 36300 - African American Literature Slavery 1940 To Present
- ENGL 36000 - Gender And Literature
- ENGL 36600 - Postcolonial Literatures
- ENGL 37300 - Science Fiction And Fantasy
- ENGL 41400 - Studies In Literature And Culture
- ENGL 46900 - Issues In Contemporary Criticism And Theory

### Choose One Writing Course

- ENGL 30200 - Publications Design
- ENGL 30600 - Introduction To Professional Writing
- ENGL 30900 - Computer-Aided Publishing
- ENGL 31900 - Creative Writing
- ENGL 40000 - Creative Non-Fiction Writing
- ENGL 40600 - Review Writing
- ENGL 40900 - Introduction To Fiction Writing
- ENGL 41000 - Introduction To Creative Nonfiction Writing
- ENGL 41101 - Introduction To Writing In The Health Sciences
- ENGL 41800 - Short Fiction Writing
- ENGL 41900 - Multimedia Writing
- ENGL 42000 - Business Writing
- ENGL 42001 - Careers In English
- ENGL 42100 - Technical Writing
- ENGL 42501 - Writing For New Media
- ENGL 42601 - Writing For Social Media
- ENGL 43000 - Professional Copy Editing
- ENGL 43500 - Topics In Writing For Interactive Digital Media
- ENGL 43600 - Writing For Informational Interactive Media
- ENGL 43700 - Writing For Video Games
- ENGL 45100 - Feature Writing
- ENGL 47000 - Theories Of Rhetoric And Composition

### Free Electives (24 Credits)

Electives may come from the courses below:

### Western Heritage (3 Credits)

Choose One:

- ENGL 26400 - The Bible As Literature
- HIST 10200 - Introduction To The Ancient World
- HIST 10300 - Introduction To The Medieval World
- HIST 10400 - Introduction To The Modern World
- HIST 29000 - Russia: Yesterday, Today, And Tomorrow
- HIST 40300 - Europe In The Reformation
- HIST 40400 - Kings And Philosophers: Europe 1618-1789
- HIST 40500 - The French Revolution And Napoleon
- HIST 40600 - Rebels And Romantics: Europe 1815-1870
- NUR 22200 - Foundations Of Holistic Health And Wellness
- PHIL 11000 - Introduction To Philosophy
- PHIL 30100 - History Of Ancient Philosophy

- PHIL 30200 - History Of Medieval Philosophy
- PHIL 33100
- POL 35000 - Foundations Of Western Political Theory: From The Renaissance To Marx
- POL 35300 - Current Political Ideologies

### United States Traditions (3 Credits)

Choose One:

- ENGL 25000 - Great American Books
- ENGL 35000 - Survey Of American Literature From Its Beginnings To 1865
- ENGL 35100 - Survey Of American Literature From 1865 To The Post-World War II Period
- ENGL 38200 - The American Novel
- GBG 12700 - Development Of Business In The United States
- HIST 15100 - American History To 1877
- HIST 15200 - United States Since 1877
- HIST 31005 - The Civil War And Reconstruction, 1850 To 1877
- HIST 35001 - Gettysburg: Three Days That Changed America
- HIST 36700 - 20th Century American History
- HIST 36800 - Episodes In American Religious History
- HIST 37800 - Early National America: 1787-1850
- HIST 38600 - History Of American Foreign Relations
- HIST 46000 - American Colonial History
- HIST 46400 - Jacksonian America 1815-1850
- HIST 46700 - The Emergence Of Modern America
- HIST 46800 - Recent American History
- NUR 22200 - Foundations Of Holistic Health And Wellness
- NUR 34900 - Contemporary Trends In Health Care Systems
- POL 10100 - American Government And Politics
- POL 23300 - Introduction to The Study Of Law

### Social Ethics (3 Credits)

Choose One:

- ENGL 21600 - Ethics And Literature
- PHIL 11100 - Ethics
- PHIL 32500 - Ethics And Public Health
- SOC 22000 - Social Problems

### Racial and Ethnic Diversity (3 Credits)

Choose one:

- ANTH 37900 - Native American Cultures
- ENGL 25700 - Literature Of Black America
- HIST 36600 - Hispanic Heritage Of The United States
- HIST 40100 - Indigenous Traditions Of Latin America
- HIST 46600
- LALS 10100 - Introduction To Latin American Studies
- PSY 33400 - Cross Cultural Psychology
- PSY 33500 - Stereotyping And Prejudice
- SOC 31000 - Racial And Ethnic Diversity
- SPAN 33500 - The Literature Of The Spanish-Speaking Peoples In The United States

### Literature and the Arts (3 Credits)

Choose one:

- AD 11300 - Basic Drawing

- AD 25500 - Art Appreciation
- AD 38300 - Modern Art
- COM 24000 - Introduction To Oral Interpretation
- ENGL 20100 - The Nature Of Literary Study
- ENGL 20500 - Introduction To Creative Writing
- ENGL 22100 - Introduction To Shakespeare
- ENGL 23000 - Great Narrative Works
- ENGL 23100 - Introduction To Literature
- ENGL 23200 - Thematic Studies In Literature
- ENGL 23500 - Introduction To Drama
- ENGL 23700 - Introduction To Poetry
- ENGL 23800 - Introduction To Fiction
- ENGL 23900 - Introduction To Biography
- ENGL 24000 - Survey Of The British Literature: From The Beginnings Through The Neoclassical Period
- ENGL 24100 - Survey Of The British Literature: From The Rise Of Romanticism To The Modern Period
- ENGL 25000 - Great American Books
- ENGL 25700 - Literature Of Black America
- ENGL 26400 - The Bible As Literature
- ENGL 26600 - World Literature: From The Beginnings To 1700 A.D.
- ENGL 26700 - World Literature: From 1700 A.D. To The Present
- ENGL 28600 - The Movies
- ENGL 31100 - Identity In Ethnic American Women's Literature
- ENGL 31800 - Graphic Narrative
- ENGL 35000 - Survey Of American Literature From Its Beginnings To 1865
- ENGL 35100 - Survey Of American Literature From 1865 To The Post-World War II Period
- ENGL 35600 - American Humor
- ENGL 36000 - Gender And Literature
- ENGL 37300 - Science Fiction And Fantasy
- ENGL 37900 - The Short Story
- ENGL 38100 - The British Novel
- ENGL 38200 - The American Novel
- ENGL 40700 - Introduction To Poetry Writing
- ENGL 40900 - Introduction To Fiction Writing
- ENGL 41000 - Introduction To Creative Nonfiction Writing
- ENGL 41100 - Studies In Major Authors
- ENGL 44100 - Chaucer's Canterbury Tales
- ENGL 44200 - Shakespeare
- ENGL 44400 - Milton
- ENGL 46900 - Issues In Contemporary Criticism And Theory
- MUS 25000 - Music Appreciation
- PHIL 27500 - The Philosophy Of Art
- SPAN 23500 - Spanish American Literature In Translation
- SPAN 24100 - Introduction To The Study Of Hispanic Literature
- SPAN 33500 - The Literature Of The Spanish-Speaking Peoples In The United States
- THTR 20100 - Theatre Appreciation
- THTR 30800 - The History And Development Of The American Musical Theatre
- THTR 34800 - Dramatic Performance In Context

### Individual and Society (3 Credits)

Choose one:

- ANTH 10000 - Introduction To Anthropology
- COM 21200 - Approaches To The Study Of Interpersonal Communication
- COM 25000 - Mass Communication And Society
- COM 32000 - Small Group Communication
- COM 32400 - Introduction To Organizational Communication
- ECON 21000 - Principles Of Economics
- ECON 25200 - Macroeconomics
- ENGL 22700 - Elements Of Linguistics
- NUR 21800 - Human Development And Health Promotion
- NUR 22200 - Foundations Of Holistic Health And Wellness
- PSY 12000 - Elementary Psychology
- PSY 20000 - Introduction To Cognitive Psychology
- PSY 23500 - Child Psychology
- PSY 24000 - Introduction To Social Psychology
- PSY 25000 - Psychology of Adjustment
- PSY 25100 - Health Psychology
- PSY 35000 - Abnormal Psychology
- SOC 10000 - Introductory Sociology
- SOC 34000 - General Social Psychology
- SOC 35000 - Social Psychology Of Marriage
- SOC 36500 - Constructing American Families

### Global Cultures (3 Credits)

Choose one:

- ANTH 20500 - Human Cultural Diversity
- ASL 28000 - American Deaf Community: Language, Culture, And Society
- ENGL 26600 - World Literature: From The Beginnings To 1700 A.D.
- ENGL 26700 - World Literature: From 1700 A.D. To The Present
- ENGL 36600 - Postcolonial Literatures
- HIST 10500 - Survey Of Global History
- HIST 27100 - Introduction To Colonial Latin American History (1492-1810)
- HIST 27200 - Introduction To Modern Latin American History (1810 To The Present)
- HIST 30501 - Latin American History Through Film
- HIST 35201 - Revolution And Revolutionaries In 20th And 21st Century Latin America
- HIST 36110 - Environmental History Of Latin America
- HIST 36600 - Hispanic Heritage Of The United States
- HIST 40100 - Indigenous Traditions Of Latin America
- HIST 42500 - Social And Ecological History Of The Andes
- LALS 10100 - Introduction To Latin American Studies
- PHIL 33000
- POL 13000 - Introduction To International Relations
- POL 14100 - Governments Of The World
- POL 23200 - Contemporary Crises In International Relations
- POL 32300 - Comparative Environmental Policy
- POL 34500 - West European Democracies In The Post-Industrial Era
- SOC 40300 - Sociology Of Developing Countries In Era Of Globalization
- SOC 40400 - The Environment And Social Justice



- SOC 40500 - Power, Social Control And The Media
- SOC 40600 - People's Movements And Social Power
- SPAN 23500 - Spanish American Literature In Translation

### Gender Issues (3 Credits)

Choose one:

- ANTH 23000 - Gender Across Cultures
- COM 37600 - Communication And Gender
- ENGL 31100 - Identity In Ethnic American Women's Literature
- ENGL 36000 - Gender And Literature
- GBG 45000 - Women In Business
- HIST 36500 - Women In America
- IDIS 10600 - Introduction To Gender Studies
- PHIL 40800 - Philosophy Of Love And Friendship
- PSY 23900 - The Psychology Of Women
- PSY 36500 - Development of Gender Roles in Children
- SOC 31501 - Gender In Society
- SOC 31700 - Sociology Of Sex And Sexualities
- WOST 28000

### Total 120 Credits Required

## English, BA, Concentration: English Teaching

### Degree Requirements

#### PNW General Education Core (30 Credits Minimum)

##### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

##### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

##### Quantitative Reasoning (3 Credits)

- STAT 13000 - Statistics And Contemporary Life
- or
- MA 15300 - College Algebra

##### Natural Sciences (3 Credits)

Natural Sciences Course with Lab - Select from Core list

##### Technology (3 Credits)

Select from Technology Core list

##### Humanities (3 Credits)

- PHIL 11000 - Introduction To Philosophy

##### Social Sciences (3 Credits)

- SOC 10000 - Introductory Sociology

##### Additional Credits (3 Credits)

- ENGL 31900 - Creative Writing

##### First-Year Experience (FYE) (3 Credits)

- PHIL 10700 - Freshman Experience -English & Philosophy

### Major Core (42 Credits)

- ENGL 20100 - The Nature Of Literary Study
- EDFA 20000 - History And Philosophy Of Education
- EDPS 22000 - Psychology Of Learning
- EDPS 26000 - Introduction To Special Education
- EDCI 35501 - Teaching and Learning K-12 Classroom
- EDCI 36600 - Use Of Assessment In The K-12 Classroom
- EDPS 37000 - Teaching Students With Diverse Learning Needs In K-12 Class
- ECON 10100 - Survey Of Economics
- EDCI 34100 - English Teaching In Senior High, Junior High And Middle Schools
- EDCI 32300 - Educational Technology For Teaching And Learning
- EDCI 49700 - Supervised Teaching

## Other Required Courses (60 Credits)

### Foreign Language (12 Credits)

Spanish, French, German, or Japanese. Must complete 4 semesters of the same foreign language

### Literature Requirement (39 Credits)

Pre/Co-requisite ENGL 10000 or ENGL 10400 or ENGL 10800 and/or ENGL 20100. Must take 13 courses:

#### Choose 5 Survey Courses From:

Should be taken in Freshmen/Sophomore years.

- ENGL 24000 - Survey Of The British Literature: From The Beginnings Through The Neoclassical Period
- ENGL 24100 - Survey Of The British Literature: From The Rise Of Romanticism To The Modern Period (m)
- ENGL 26000 - Introduction To World Literature: To 1700
- ENGL 26100 - Introduction To World Literature: Since 1700
- ENGL 35000 - Survey Of American Literature From Its Beginnings To 1865
- ENGL 35100 - Survey Of American Literature From 1865 To The Post-World War II Period

#### Choose One From:

- ENGL 30800 - Modern English Grammar \*
- ENGL 31900 - Creative Writing \*
- ENGL 39100 - Composition For English Teachers \*\*
- ENGL 49200 - Literature In The Secondary Schools (Genre) \*\*

\* Should be taken Sophomore/Junior Year

\*\* Should be taken Junior/Senior Year

#### Choose One Linguistics From:

- ENGL 32600 - English Linguistics \*
- ENGL 32700 - English Language I: History And Development (Historical) \*

\* Should be taken Sophomore/Junior Year

#### Choose One Junior/Senior Seminar From:

Should be taken in Junior/Senior years.

- ENGL 41100 - Studies In Major Authors
- ENGL 41200 - Studies In Genre
- ENGL 41300 - Studies In Literature And History
- ENGL 41400 - Studies In Literature And Culture

#### Should Be Taken in Senior Year

- ENGL 44200 - Shakespeare (Cultural)
- ENGL 40300 - Literary Theory (Cultural)

### Physical Science (3 Credits)

- SCI 11200 - Introducton To The Physical Sciences I
- Any Phys Sci

- SCI 11300 - Introduction To The Physical Sciences II
- SCI 14000 - Introduction To Forensic Science
- SCI 15000 - Brewing Science

### History (3 Credits)

- HIST 10400 - Introduction To The Modern World
- HIST 11000 - The Pre-Modern World
- HIST 15100 - American History To 1877
- HIST 15200 - United States Since 1877

### Political Science (3 Credits)

- POL 10100 - American Government And Politics
- POL 13000 - Introduction To International Relations
- POL 14100 - Governments Of The World

### Total 132 Credits Required

## English, BA, Concentration: English Writing

### Degree Requirements

#### PNW General Education Core (30 Credits Minimum)

##### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

##### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

##### Quantitative Reasoning (3 Credits)

- STAT 13000 - Statistics And Contemporary Life
- or
- MA 15300 - College Algebra

##### Natural Sciences (3 Credits)

Any Natural Science with Lab - Select from Core List

##### Technology (3 Credits)

Select from Technology Core List

##### Humanities (3 Credits)

- PHIL 11000 - Introduction To Philosophy

##### Social Sciences (6 Credits)

- SOC 10000 - Introductory Sociology
- PSY 12000 - Elementary Psychology

##### First-Year Experience (FYE) (3 Credits)

- PHIL 10700 - Freshman Experience -English & Philosophy

##### Major Core (90 Credits)

- ENGL 23100 - Introduction To Literature
- ECON 10100 - Survey Of Economics

##### Foreign Language (12 Credits)

Spanish, French, German, or Japanese. Must complete 4 semesters of the same foreign language

##### Writing Requirement (36 Credits)

Must take 12 courses from:

- COM 30200 - Publications Design (m)

or

- ENGL 30200 - Publications Design (m)

- COM 45100 - Feature Writing (E X L)

or

- ENGL 45100 - Feature Writing (E X L)

- ENGL 31900 - Creative Writing
- ENGL 40400 - Web Page Design
- ENGL 40600 - Review Writing (m) (E X L)
- ENGL 41101 - Introduction To Writing In The Health Sciences (E X L)
- ENGL 42000 - Business Writing (m)
- ENGL 43100 - Web Usability: Writing And Reading On The Web (E X L)
- ENGL 43600 - Writing For Informational Interactive Media (E X L)
- ENGL 43700 - Writing For Video Games (m) (E X L)
- ENGL 42501 - Writing For New Media
- ENGL 43500 - Topics In Writing For Interactive Digital Media

### Additional Math or Science Course (3 Credits)

- PHIL 15000 - Principles Of Logic

or

- choose any MA (except MA 11500), STAT, SCI, or CIS course.

### History (3 Credits)

- HIST 10400 - Introduction To The Modern World
- HIST 11000 - The Pre-Modern World
- HIST 15100 - American History To 1877
- HIST 15200 - United States Since 1877

### Political Science (3 Credits)

- POL 10100 - American Government And Politics
- POL 13000 - Introduction To International Relations
- POL 14100 - Governments Of The World

### Aesthetics (3 Credits)

Choose 1 course from:

- AD 25500 - Art Appreciation
- MUS 25000 - Music Appreciation
- ENGL 31900 - Creative Writing
- ENGL 28600 - The Movies
- COM 34300 - Fundamentals Of Oral Interpretation
- THTR 20100 - Theatre Appreciation

### Free Electives (24 Credits)

### Total 120 Credits Required

## Master of Arts

## English, MA

## English, MA

### Special Admission Requirements

- Writing sample

- Strong undergraduate major or minor in English or equivalent

## Program Requirements

- ENGL 50100 - Introduction To English Studies
- Thirty (30) additional credits at the graduate level.

## English Electives

A student may take a combination of up to six hours credit in either two non-English graduate courses or one non-English graduate course and one English course at the 40000 level. The student must take MA Comprehensive Exams or write a MA thesis (see below).

## Exam and Thesis Options

Every MA student must either write a thesis or pass comprehensive exams.

1. Comprehensive Exams - Exams are given to students in their final semester in the MA program based on their coursework. A plan of study must be submitted to the Graduate School Office one semester prior to writing MA exams.
2. Thesis - The student should choose a professor to serve as thesis chair and two other professors to serve on the thesis committee, and complete ENGL 59000 (a directed study preparing a bibliography and prospectus) and ENGL 69800 (writing the thesis). These courses count as credits towards the degree. Please see the Department of English and Philosophy's website for additional information about admission and remaining in good standing with the department.

## Total 33 Credits Required

## Minor

## Creative Writing as a Profession Minor

### Course Requirements (18 Credits)

#### Required Courses (9 Credits)

- ENGL 30502 - Creative Writing As A Profession
- ENGL 20500 - Introduction To Creative Writing  
or
- ENGL 31900 - Creative Writing
- ENGL 42001 - Careers In English  
or
- ENGL 48000 - Internship In Writing

#### Creative Writing Electives (6 Credits)

##### Choose Two:

- ENGL 40700 - Introduction To Poetry Writing
- ENGL 40900 - Introduction To Fiction Writing  
or
- ENGL 41800 - Short Fiction Writing
- ENGL 40000 - Creative Non-Fiction Writing  
or
- ENGL 41000 - Introduction To Creative Nonfiction Writing

#### Technical and Professional Writing Electives (3 Credits)

##### Choose One:

- ENGL 30200 - Publications Design
- ENGL 40400 - Web Page Design

- ENGL 40600 - Review Writing
- ENGL 41101 - Introduction To Writing In The Health Sciences
- ENGL 41900 - Multimedia Writing
- ENGL 42000 - Business Writing
- ENGL 42100 - Technical Writing
- ENGL 42501 - Writing For New Media
- ENGL 42601 - Writing For Social Media
- ENGL 43000 - Professional Copy Editing
- ENGL 43100 - Web Usability: Writing And Reading On The Web
- ENGL 43500 - Topics In Writing For Interactive Digital Media
- ENGL 43600 - Writing For Informational Interactive Media
- ENGL 43700 - Writing For Video Games
- ENGL 45100 - Feature Writing

## English Literature Minor

### Course Requirements (Min. 15 Credit Hours)

- 15 Credit Hours minimum - No Credit Hours for the Minor may be taken Pass/No Pass
- 2.5 GPA minimum in the Minor
- Prerequisites: ENGL 10400 and ENGL 10500
- All appropriate prerequisites must be fulfilled before enrolling in Minor courses
- Minor must be attached to a Major in any discipline other than English and all Major requirements must be met

### Required Course (3 Credits)

- ENGL 20100 - The Nature Of Literary Study
- ENGL 25000 - Great American Books
- ENGL 25700 - Literature Of Black America
- ENGL 35000 - Survey Of American Literature From Its Beginnings To 1865
- ENGL 35100 - Survey Of American Literature From 1865 To The Post-World War II Period
- ENGL 35600 - American Humor
- ENGL 37200 - American Folklore

### American Literature (3 Credits)

**Choose One:**

### British Literature (3 Credits)

**Choose One:**

- ENGL 24000 - Survey Of The British Literature: From The Beginnings Through The Neoclassical Period
- ENGL 24100 - Survey Of The British Literature: From The Rise Of Romanticism To The Modern Period
- ENGL 33100 - Medieval English Literature
- ENGL 33300 - Renaissance English Literature
- ENGL 33500 - Restoration And Eighteenth-Century English Literature
- ENGL 33700 - Nineteenth-Century English Literature

### Genre or Author Course (3 Credits)

**Choose One:**

- ENGL 37300 - Science Fiction And Fantasy
- ENGL 37500 - British Drama To 1800, Exclusive Of Shakespeare
- ENGL 37700 - Major Modern Poetry
- ENGL 37900 - The Short Story
- ENGL 38100 - The British Novel

- ENGL 38200 - The American Novel
- ENGL 38300 - Modern Drama: Ibsen To The Absurdist
- ENGL 44100 - Chaucer's Canterbury Tales
- ENGL 44200 - Shakespeare
- ENGL 44400 - Milton

### Elective Course (3 Credits)

*Must be at the 30000 level or above.*

#### Choose One:

- ENGL 32700 - English Language I: History And Development
- ENGL 33100 - Medieval English Literature
- ENGL 33300 - Renaissance English Literature
- ENGL 33500 - Restoration And Eighteenth-Century English Literature
- ENGL 33700 - Nineteenth-Century English Literature
- ENGL 35000 - Survey Of American Literature From Its Beginnings To 1865
- ENGL 35100 - Survey Of American Literature From 1865 To The Post-World War II Period
- ENGL 35600 - American Humor
- ENGL 36000 - Gender And Literature
- ENGL 37200 - American Folklore
- ENGL 39600 - Studies In Literature And Language
- ENGL 46800 - Problems In The History Of Criticism
- ENGL 46900 - Issues In Contemporary Criticism And Theory
- ENGL 59600 - Advanced Studies In Literature Or Language

## English Minor

### Course Requirements (15 Credit Hours)

#### Required Course (3 Credits)

##### Choose One:

- ENGL 20100 - The Nature Of Literary Study
- OR**

- ENGL 23100 - Introduction To Literature

#### British, World, or American Literature (3 Credits)

##### Choose One:

- ENGL 24000 - Survey Of The British Literature: From The Beginnings Through The Neoclassical Period
- ENGL 24100 - Survey Of The British Literature: From The Rise Of Romanticism To The Modern Period
- ENGL 26000 - Introduction To World Literature: To 1700
- ENGL 26100 - Introduction To World Literature: Since 1700
- ENGL 35000 - Survey Of American Literature From Its Beginnings To 1865
- ENGL 35100 - Survey Of American Literature From 1865 To The Post-World War II Period

#### Women Authors & Writers (3 Credits)

##### Choose One:

- ENGL 31200 - Ethnic American Women Writers
- ENGL 31300 - African American Women's Fiction
- ENGL 32000 - By And About Women
- ENGL 32300 - Sexual Identity In Literature
- ENGL 32400 - International Women's Literature
- ENGL 34000 - Literature By Women Of Color

#### Writing Requirement (3 Credits)

**Choose One:**

- ENGL 31900 - Creative Writing
- ENGL 41800 - Short Fiction Writing
- ENGL 42000 - Business Writing
- ENGL 42501 - Writing For New Media
- ENGL 43600 - Writing For Informational Interactive Media
- ENGL 43700 - Writing For Video Games
- ENGL 45100 - Feature Writing

**English Requirement (3 Credits)**

*Choose one course from one of the groups below:*

**Genre Courses:**

- ENGL 31400 - Modern Poetry
- ENGL 35600 - American Humor
- ENGL 38100 - The British Novel
- ENGL 38200 - The American Novel
- ENGL 38300 - Modern Drama: Ibsen To The Absurdist
- ENGL 41200 - Studies In Genre
- ENGL 47900 - The Short Story

**Cultural Courses:**

- ENGL 28600 - The Movies
- ENGL 31000 - Introduction To Popular Culture
- ENGL 32400 - International Women's Literature
- ENGL 35500 - African American Literature Slavery To 1940
- ENGL 36300 - African American Literature Slavery 1940 To Present
- ENGL 41400 - Studies In Literature And Culture

**Historical Courses:**

- ENGL 38600 - History Of Film To 1938
- ENGL 38700 - History Of The Film From 1938 To The Present
- ENGL 41300 - Studies In Literature And History
- ENGL 46200 - The Bible As Literature: The Old Testament
- ENGL 46300 - The Bible As Literature: The New Testament

**Department of History and Philosophy****Bachelor of Arts****History, BA**

The Purdue University Northwest Bachelor of Arts degree in History meets the general guidelines of the American Historical Association. Earning a Bachelor's degree in History will open many opportunities. Graduates with degrees in History will be well suited to pursue careers as researchers, curators, archivists, entrepreneurs, business managers and in government service. The degree also prepares students well for graduate school, MBA programs and law school. Students earning a degree in History will gain essential critical thinking skills, expertise in writing and communication, research capabilities and analytical skills that potential employers find essential in the workplace.

A special feature of the program is its Research Seminar, which will provide students with the opportunity to delve into and investigate local historical societies or other archives. Upon completion of their investigations, students will have an opportunity to present their work.

PNW history students may apply for membership in the Phi Alpha Theta national history honor society, which provides students with an opportunity for recognition of excellence, and allow them to participate in regional and national research conferences and be eligible for various scholarships, awards and recognition.

**Degree Requirements**



## PNW General Education Core (30 Credits Minimum)

### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

### Quantitative Reasoning (3 Credits)

- MA 12301 - Mathematical Ideas
- STAT 11300 - Statistics And Society
- STAT 13000 - Statistics And Contemporary Life

### Natural Sciences (3 Credits)

Select from the Natural Sciences Core list

### Technology (3 Credits)

- CIS 20400 - Introduction To Computer-Based Systems  
or
- CNIT 10700 - Computers And Software Packages

### Humanities (3 Credits)

- HIST 15100 - American History To 1877

### Social Sciences (6 Credits)

- PSY 12000 - Elementary Psychology
- SOC 10000 - Introductory Sociology

### First-Year Experience (FYE) (3 Credits)

- HIST 10600 - Introduction To History And Social Studies  
or
- GS 19100 - First-Year Experience I

### Major Core (39 Credits)

- HIST 10500 - Survey Of Global History
- POL 10100 - American Government And Politics
- HIST 10400 - Introduction To The Modern World
- HIST 29501 - Introduction To Historiography
- AD 25500 - Art Appreciation
- EAS 10000 - Planet Earth  
or
- FN 30300 - Essentials Of Nutrition
- ECON 10100 - Survey Of Economics  
or
- ECON 21000 - Principles Of Economics
- PHIL 11100 - Ethics
- ENGL 23100 - Introduction To Literature
- SOC 31501 - Gender In Society  
or
- WOST 12100 - Introduction To Women's Studies

- POL 13000 - Introduction To International Relations
- SOC 31000 - Racial And Ethnic Diversity  
or
- SOC 31400 - Race And Ethnic Relations
- HIST 49500 - Research Seminar In Historical Topics

## Other Required Courses (51 Credits)

### Foreign Language (12 Credits)

Must complete 4 semesters of the same foreign language.

#### Level I Course (m) (3 Credits)

Choose from:

- SPAN 10100 - Spanish Level I
- FR 10100 - French Level I
- GER 10100 - German Level I
- JPNS 10100 - Japanese Level I

#### Level II Course (3 Credits)

Choose from:

- SPAN 10200 - Spanish Level II
- FR 10200 - French Level II
- GER 10200 - German Level II
- JPNS 10200 - Japanese Level II

#### Level III Course (3 Credits)

Choose from:

- SPAN 20100 - Spanish Level III
- FR 20100 - French Level III
- GER 20100 - German Level III
- JPNS 20100 - Japanese Level III

#### Level IV Course (3 Credits)

Choose from:

- SPAN 20200 - Spanish Level IV
- FR 20200 - French Level IV
- GER 20200 - German Level IV
- JPNS 20200 - Japanese Level IV

### US History Electives (6 Credits)

30000 level US History courses have a prerequisite of HIST 15100 or HIST 15200. Other courses may be approved by the program advisor.

### Non-US History Electives (6 Credits)

30000 level US History courses have a prerequisite of HIST 15100 or HIST 15200. Other courses may be approved by the program advisor.

### History Free Electives (12 Credits)

30000 level or above

### Free Electives (15 Credits)

## Total 120 Credits Required

## History, BA, Concentration: Social Studies Education

The Purdue University Northwest Bachelor of Arts in History with a concentration in Social Studies Education is housed within the department of History and Philosophy. This program, cooperatively developed and supported by the

department and the PNW School of Education and Counseling, is specifically designed to provide preparation for teachers of social studies. In alignment with standards set by the state of Indiana Department of Education, students each specialize in the teaching of historical perspectives, and additionally choose at least two of the following areas of specialization: Economics, Government and Citizenship, Psychology, and Sociology.

Graduates of our program have gone on to become excellent teachers, earning awards and successfully changing the lives of students in Indiana and beyond through social studies education.

## **Degree Requirements**

### **PNW General Education Core (30 Credits Minimum)**

#### **English Composition (6 Credits)**

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

#### **Speech Communication (3 Credits)**

- COM 11400 - Fundamentals Of Speech Communication

#### **Quantitative Reasoning (3 Credits)**

- STAT 13000 - Statistics And Contemporary Life

#### **Natural Sciences (3 Credits)**

Select from the Natural Sciences Core list

#### **Technology (3 Credits)**

- CIS 20400 - Introduction To Computer-Based Systems

#### **Humanities (3 Credits)**

- HIST 15100 - American History To 1877

#### **Social Sciences (3 Credits)**

- SOC 10000 - Introductory Sociology

#### **Additional Credits - Life Science (3 Credits)**

- SCI 10300 - Survey Of The Biological World
- SCI 10400 - Introduction To Environmental Biology
- SCI 10500 - Invitation To Human Biology
- SCI 11400 - Introduction to Life Science

#### **First-Year Experience (FYE) (3 Credits)**

- HIST 10600 - Introduction To History And Social Studies

### **Major Core (57 Credits)**

- HIST 10500 - Survey Of Global History
- EDPS 26000 - Introduction To Special Education
- EDST 20000 - History And Philosophy Of Education
- HIST 11000 - The Pre-Modern World
- ENGL 23100 - Introduction To Literature
- EDPS 22000 - Psychology Of Learning
- HIST 15200 - United States Since 1877
- POL 10100 - American Government And Politics
- ECON 10100 - Survey Of Economics
- HIST 29500 - Research And Writing In History
- EDCI 36600 - Use Of Assessment In The K-12 Classroom
- EDPS 35500 - Teaching & Learning in K-12 Classroom Credit Hours: 3.00
- EDPS 37000 - Teaching Students With Diverse Learning Needs In K-12 Class
- EDCI 34700 - Strategies Of Social Studies Instruction In Senior High, Junior High And Middle Schools
- EDCI 30900 - Reading In Middle And Secondary Schools: Methods And Problems

- EDCI 49700 - Supervised Teaching

## Other Required Courses (57 Credits)

### Foreign Language (12 Credits)

French, Spanish, German

### Philosophy (3 Credits)

Any 10000 level, except PHIL10500

### Aesthetics (3 Credits)

Choose 1 course from:

- AD 25500 - Art Appreciation
- MUS 25000 - Music Appreciation
- ENGL 31900 - Creative Writing
- PHIL 10600 - Human Experience In Art Literature, Music, And Philosophy
- THTR 20100 - Theatre Appreciation

### History Elective (3 Credits)

Any 30000 level

### History Elective (Non-American) (6 Credits)

Any 3000 level History course.

- HIST 30600 - The United States In 1960's
- HIST 31600 - History Of Architecture II
- HIST 32500 - History Of Crime In America
- HIST 33600 - History Of Organized Crime In America
- HIST 36500 - Women In America
- HIST 37400 - United States Economic History
- HIST 41000 - Community Preservation Project
- HIST 42600 - History Of United States-China Relations
- HIST 55300 - Colonial America, 1600-1776
- HIST 56400
- HIST 58400 - Social History Of The United States
- or any non-American History course approved by the department.
- HIST 39300 - Historical Geography recommended.

## Intense Area 2 and 3 (30 Credits)

Choose 15 credit hours in two of the following intense areas:

### Economics

- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics

Plus 3 of the Following:

- ECON 31100 - Environmental Economics
- ECON 35200 - Intermediate Macroeconomics
- ECON 37500 - United States Economic History
- ECON 38000 - Money And Banking
- ECON 41900 - Managerial Economics
- ECON 43400 - International Trade
- ECON 46500 - Economic Forecasting Techniques
- HIST 37400 - United States Economic History

### Government

- POL 10100 - American Government And Politics
- POL 13000 - Introduction To International Relations

- POL 14100 - Governments Of The World
- POL 20000 - Introduction To The Study Of Political Science
- Plus two 30000 level or higher courses as approved by the department.

### Psychology

- POL 12000 - Introduction To Public Policy And Public Administration
- POL 36100
- POL 36200
- SOC 33900 - Introduction To The Sociology Of Developing Nations
- SOC 34000 - General Social Psychology
- PSY 34400 - Human Sexuality
- PSY 42800 - Drugs And Behavior
- Plus one 30000 level or higher PSY course.

### Sociology

- SOC 10000 - Introductory Sociology
- SOC 22200
- plus three 30000 level or higher SOC courses.

## Total 144 Credits Required

## Philosophy, BA

Literally, philosophy means "love of wisdom." A good working definition might be "the search for truth," because philosophy concerns itself with questions and problems that we as humans have long considered, including questions about our place in the universe, the meaning of a good life, and the nature and value of knowledge.

Because they are often focused on their future careers, few students begin college with the intention of majoring in philosophy. Those who do choose philosophy as a major usually switch from something else, such as management or political science, or they might add philosophy as a second major. They switch because they discover the value of a good education in philosophy.

A major in philosophy helps to develop a variety of important skills which contribute to professional success. These include analytical thinking, abstract reasoning, and problem-solving, useful in every professional career; the ability to build an argument (highly valued by law schools); clarity of communication both written and spoken; and an increased awareness of human solutions to a variety of human problems. Philosophy is therefore excellent training for many careers and also for graduate school preparation.

## Degree Requirements

### PNW General Education Core (30 Credits Minimum)

#### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

#### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

#### Quantitative Reasoning (3 Credits)

- STAT 13000 - Statistics And Contemporary Life
- or
- MA 15300 - College Algebra

#### Natural Sciences (3 Credits)

Any Natural Sciences with Lab

#### Technology (3 Credits)

- CIS 20400 - Introduction To Computer-Based Systems

#### Humanities (3 Credits)

- PHIL 11000 - Introduction To Philosophy  
or
- PHIL 11100 - Ethics

### Social Sciences (6 Credits)

- PSY 12000 - Elementary Psychology
- SOC 10000 - Introductory Sociology

### First-Year Experience (FYE) (3 Credits)

- PHIL 10700 - Freshman Experience -English & Philosophy

### Major Core (90 Credits)

#### Introductory Philosophy (3 Credits)

- PHIL 10100 - The History Of Philosophy
- PHIL 11000 - Introduction To Philosophy
- PHIL 29300 - Selected Topics In Philosophy
- PHIL 49000 - Advanced Topics In Philosophy

#### Logic (3 Credits)

- PHIL 15000 - Principles Of Logic
- PHIL 12000 - Critical Thinking
- PHIL 29300 - Selected Topics In Philosophy
- PHIL 49000 - Advanced Topics In Philosophy

#### Ethics (3 Credits)

- PHIL 11000 - Introduction To Philosophy
- PHIL 32400 - Ethics For The Professions
- PHIL 29300 - Selected Topics In Philosophy
- PHIL 49000 - Advanced Topics In Philosophy

#### Ethics for the Professions (3 Credits)

- PHIL 32400 - Ethics For The Professions
- PHIL 11100 - Ethics
- PHIL 29300 - Selected Topics In Philosophy
- PHIL 49000 - Advanced Topics In Philosophy

#### Metaphysics/Epistemology (6 Credits)

Choose two:

- PHIL 20600 - Philosophy Of Religion
- PHIL 21900 - Introduction To Existentialism
- PHIL 22100 - Introduction To Philosophy Of Science
- PHIL 29300 - Selected Topics In Philosophy
- PHIL 49000 - Advanced Topics In Philosophy

#### History of Philosophy (6 Credits)

Choose two:

- PHIL 30100 - History Of Ancient Philosophy
- PHIL 30300 - History Of Modern Philosophy
- PHIL 22100 - Introduction To Philosophy Of Science
- PHIL 29300 - Selected Topics In Philosophy
- PHIL 49000 - Advanced Topics In Philosophy

#### Philosophy Elective/Advanced Topics in Philosophy (6 Credits)

Students must take at least two PHIL 49000 (preferably in semesters 7 and 8).

- PHIL 49000 - Advanced Topics In Philosophy

## Foreign Language (12 Credits)

Choose from French, German, Japanese, or Spanish. Must complete 4 semesters of the same foreign language.

## Aesthetics (3 Credits)

Choose 1 course from:

- AD 25500 - Art Appreciation
- MUS 25000 - Music Appreciation
- ENGL 31900 - Creative Writing
- PHIL 10600 - Human Experience In Art Literature, Music, And Philosophy
- THTR 20100 - Theatre Appreciation

## History (3 Credits)

- HIST 10400 - Introduction To The Modern World
- HIST 11000 - The Pre-Modern World
- HIST 15100 - American History To 1877
- HIST 15200 - United States Since 1877

## Literature (3 Credits)

- ENGL 20100 - The Nature Of Literary Study  
or
- ENGL 23100 - Introduction To Literature

## Political Science (3 Credits)

- POL 10100 - American Government And Politics

## Economics (3 Credits)

- ECON 10100 - Survey Of Economics

## Math, Statistics, Science, or Computer Course (3 Credits)

Choose any MA (except MA 11500), STAT, SCI, or CIS course. CIS 20400 is highly recommended to meet general education requirements.

## Free Elective EXL (3 Credits)

Any EXL Course

## Free Electives (27 Credits)

## Total 120 Credits Required

## Master of Arts

### History, MA

The Purdue University Northwest Master's degree program in History is designed to stimulate critical thinking, broaden historical knowledge, and enhance research and analytical writing skills. The program is well-suited for social studies and history teachers who wish to enhance their teaching by keeping current in their fields, in addition to students who wish to continue their studies at the Ph.D. level. Critical thinking, research, and analytical skills acquired through this program also prepare students for careers in business, law, public policy, and government.

### Special Admission Requirements

- Scores from the Graduate Record Exam or GRE (at the discretion of the department) may be required. The GRE is mandated for students with an undergraduate GPA below 3.0/4.0.
- An undergraduate History major or a strong minor.
- Completion of the application process (submission of official transcripts of all undergraduate work, three recommendations, a 300 to 500-word essay on why the student wishes to attend graduate school and a completed on-line application form). The student may take as many as 12 credits in a temporary or post-baccalaureate status prior to being admitted to the program.

### Program Requirements for Non-Thesis Option

## Primary Area (27 Credits)

### Related Area (6 Credits)

Related areas need not be in History. All classes must be 50000- or 60000-level.

### History Electives

At least 12 credits of History at 60000 level. Written and/or oral comprehensive examinations after completion of coursework.

## Program Requirements for Thesis Option

### Primary Area (24-27 Credits)

### Related Area (6 Credits)

Related areas need not be in History. All classes must be 50000- or 60000-level.

### History Electives

At least 9 credits of History at 60000 level, plus HIST 69800 - Research MA Thesis. Written and/or oral comprehensive examinations after completion of coursework. Completion of a thesis, and defense of thesis in accordance with criteria of the Graduate School.

### Transfer of Credit

No more than two courses from another accredited institution.

## Total 33 Credits Required

## Minor

### Diversity Minor

### Course Requirements (15 Credit Hours)

#### Required Course (3 Credits)

- HIST 46601 - Immigration And Ethnicity In U S History

#### Elective Courses (12 Credits)

##### Choose Four:

- ANTH 20500 - Human Cultural Diversity
- EDCI 28500 - Multiculturalism And Education
- EDCI 28600 - Multiculturalism In Secondary Schools
- ENGL 25700 - Literature Of Black America
- ENGL 31100 - Identity In Ethnic American Women's Literature
- ENGL 36600 - Postcolonial Literatures
- ENGL 46600 - Cultural Encounters
- FLL 49000 - Special Topics In Foreign Languages And Literatures
- HIST 36500 - Women In America
- HIST 36600 - Hispanic Heritage Of The United States
- IDIS 38000 - Gender And Multiculturalism
- IDIS 48400 - Ethnic Nationalism In The Modern World
- IDIS 49000 - Directed Reading in Interdisciplinary Studies
- NUR 35800 - Cultural Diversity Related To Illness
- OLS 45400 - Gender And Diversity In Management
- SOC 31000 - Racial And Ethnic Diversity
- SOC 31501 - Gender In Society
- SOC 37300 - Gender And Interaction
- SPAN 23500 - Spanish American Literature In Translation
- SPAN 24100 - Introduction To The Study Of Hispanic Literature



- SPAN 33500 - The Literature Of The Spanish-Speaking Peoples In The United States
- SPAN 34100 - Hispanic Literature I: Poetry And Drama
- SPAN 34200 - Hispanic Literature II: Prose

## **Ethnic Studies Minor**

Students should contact the Office of the Dean, College of Humanities, Education, and Social Sciences, to develop a plan of study. With the consent of the Dean, a student may concentrate on another ethnic group by identifying an appropriate sequence of approved courses with nine credit hours focusing on that specific ethnic group.

### **Course Requirements (18 Credit Hours)**

#### **Required Course (3 Credits)**

- ETHN 10000 - Introduction To Ethnic Studies

#### **Ethnic Studies Option (9 Credits)**

**Nine (9) credits from one of the options below.**

##### **African American Studies Option**

**Choose Three:**

- ETHN 20200 - The African American Experience
- ENGL 35500 - African American Literature Slavery To 1940
- ENGL 39600 - Studies In Literature And Language
- HIST 39700 - The Afro-American

##### **Hispanic American Studies Option**

**Choose Three:**

- ETHN 20100 - The Hispanic American Experience
- SPAN 23000 - Contemporary Spanish American Literature In Translation
- SPAN 41300 - Culture Of Spanish -Speaking Americans
- SPAN 41400 - Literature Of Spanish Speaking Americans

### **Elective Courses (6 Credits)**

**Choose Two:**

- COM 35000 - Intercultural Communication
- COM 42600 - Identity And Communication
- EDCI 58500 - Multicultural Education
- ENGL 31200 - Ethnic American Women Writers
- ENGL 34000 - Literature By Women Of Color
- ENGL 35500 - African American Literature Slavery To 1940
- ENGL 39600 - Studies In Literature And Language
- ETHN 34000 - Literature By Women Of Color
- ETHN 39000 - Topics In Ethnic Studies
- HIST 39700 - The Afro-American
- POL 35400 - Civil Liberties And The Constitution
- SOC 31400 - Race And Ethnic Relations
- SOC 51400 - Racial And Cultural Minorities
- SPAN 23000 - Contemporary Spanish American Literature In Translation
- SPAN 41300 - Culture Of Spanish -Speaking Americans
- SPAN 41400 - Literature Of Spanish Speaking Americans

## **History Minor**

### **Required Courses (15 Credit Hours)**

Five courses in History; four must be in courses numbered 30000 or higher.

History minors must earn a grade of "C" or better in each History course used to fulfill the Minor requirements.

## Philosophy Minor

### 15 Credit Hours, 5 Courses in Philosophy

Students must earn a grade of "C" or higher in each philosophy course used to fulfill the requirements for the Philosophy Minor.

## Philosophy, Ethics, Religion Minor

### Course Requirements (15 Credit Hours)

*Students must earn a grade of "C" or higher in each philosophy course used to fulfill the requirements for the PER Minor.*

One course (3 credit hours) in **Introductory Philosophy**:

- PHIL 11000 - Introduction to Philosophy
- PHIL 11100 - Ethics

Two courses (6 credit hours) in **Philosophy and Ethics**, with at least one being at the 30000-40000 level:

- PHIL 21900 - Introduction to Existentialism
- PHIL 22100 - Introduction to Philosophy of Science
- PSY 24000 - Social and Political Philosophy
- PHIL 27500 - The Philosophy of Art
- PHIL 30100 - History of Ancient Philosophy
- PHIL 30300 - History of Modern Philosophy
- PHIL 32500 - Ethics and Public Health
- PHIL 32700 - Environmental Ethics
- PHIL 40800 - Philosophy of Love and Friendship

Two courses (6 credits hours) in **Philosophy and Religion**, with at least one being at the 30000-40000 level:

- PHIL 20600 - Philosophy of Religion
- PHIL 23000 - Religions of the East
- PHIL 23100 - Religions of the West
- PHIL 30200 - History of Medieval Philosophy
- PHIL 40100 - Eastern Religions: Hinduism, Buddhism

## Department of Political Science, Economics, and World Languages and Cultures

### Bachelor of Arts

### Foreign Language, BA, Concentration: French

#### Degree Requirements

PNW General Education Core (30 Credits)

English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

Quantitative Reasoning (3 Credits)

- STAT 13000 - Statistics And Contemporary Life
- or
- MA 15300 - College Algebra

Natural Sciences (3 Credits)

Any Natural Science with Lab - Select from Core List

### **Technology (3 Credits)**

CIS 20400 or Select from Technology Core List

### **Humanities (3 Credits)**

- HIST 10400 - Introduction To The Modern World

### **Social Sciences (6 Credits)**

- SOC 10000 - Introductory Sociology
- PSY 12000 - Elementary Psychology

### **First-Year Experience (FYE) (3 Credits)**

- FLL 10300 - Freshman Experience Worldviews

### **Major Core (51 Credits)**

- FR 10100 - French Level I
- FR 10200 - French Level II
- FR 20100 - French Level III
- FR 20200 - French Level IV
- ECON 10100 - Survey Of Economics
- ENGL 23100 - Introduction To Literature

### **French Concentration Requirement (33 Credits)**

- FR 26100 - French Composition
- FR 36500 - French Conversation
- FR 46100 - Intermediate French Composition
- FR 46500 - Intermediate French Conversation
- FR 49500 - French Senior Capstone Project Course (should be taken in Senior year)
- FLL 36101 - The Nature Of Language
- FLL 31100 - French Cinema - Introduction To Film Study (should be taken during semesters 3 and 4)

### **Select One of the Following:**

- FR 35000 - French Culture
- FR 45000 - French Civilization
- FR 30700 - Commercial French

### **French Literature**

One course from:

- FR 40500 - Introduction To French Literature I
- FR 40600 - Introduction To French Literature II
- FR 39000 - Special Topics In French
- FR 49000 - Topics In French with French Literature topic.

### **French Electives**

Any (2) FR 30000 level or higher not already used to fulfill the French Requirements listed above. Electives taught in English cannot be included in the French concentration.

### **Supplemental Core (39 Credits)**

### **Additional Math or Science Course (3 Credits)**

Choose 1 from:

- Any MA (except MA 11500), STAT, SCI, CIS course  
or
- PHIL 15000 - Principles Of Logic
- CIS 20400 - Introduction To Computer-Based Systems is highly recommended to fulfill general education requirements.

**Political Science (3 Credits)**

- POL 10100 - American Government And Politics
- POL 13000 - Introduction To International Relations
- POL 14100 - Governments Of The World

**Philosophy (3 Credits)**

- PHIL 10600 - Human Experience In Art Literature, Music, And Philosophy
- PHIL 11000 - Introduction To Philosophy
- PHIL 11100 - Ethics

**Aesthetics (3 Credits)**

Choose 1 course from:

- AD 25500 - Art Appreciation
- MUS 25000 - Music Appreciation
- ENGL 31900 - Creative Writing
- ENGL 28600 - The Movies
- COM 34300 - Fundamentals Of Oral Interpretation
- THTR 20100 - Theatre Appreciation

**Free Elective EXL (3 Credits)**

One free elective must be an EXL course. Recommend Study Abroad in France the summer before senior year.

**Free Electives or Minor (24 Credits)**

Any course 10000 level or higher or select a minor.

**Total 120 Credits Required****Foreign Language, BA, Concentration: French Teaching****Degree Requirements****PNW General Education Core (30 Credits)****English Composition (6 Credits)**

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

**Speech Communication (3 Credits)**

- COM 11400 - Fundamentals Of Speech Communication

**Quantitative Reasoning (3 Credits)**

- STAT 13000 - Statistics And Contemporary Life
- or
- MA 15300 - College Algebra

**Natural Sciences (3 Credits)**

Any Natural Science with Lab - Select from General Education Core list

**Technology (3 Credits)**

CIS 20400 or Select from Technology Core list

**Humanities (3 Credits)**

- ENGL 23100 - Introduction To Literature

**Social Sciences (6 Credits)**

- SOC 10000 - Introductory Sociology
- POL 10100 - American Government And Politics

**First-Year Experience (FYE) (3 Credits)**

- FLL 10300

## Major Core (51 Credits)

- FR 10100 - French Level I
- FR 10200 - French Level II
- FR 20100 - French Level III
- FR 20200 - French Level IV
- EDFA 20000 - History And Philosophy Of Education
- EDPS 22000 - Psychology Of Learning
- EDPS 26000 - Introduction To Special Education
- ECON 10100 - Survey Of Economics
- EDCI 35501 - Teaching and Learning K-12 Classroom
- EDCI 36600 - Use Of Assessment In The K-12 Classroom
- EDPS 37000 - Teaching Students With Diverse Learning Needs In K-12 Class
- EDCI 34200 - Strategies Of Foreign Language Instruction In Senior High, Junior High And Middle Schools
- EDCI 30900 - Reading In Middle And Secondary Schools: Methods And Problems
- EDCI 49700 - Supervised Teaching

## Supplemental Core (45 Credits)

### Aesthetics (3 Credits)

Choose 1 course from:

- AD 25500 - Art Appreciation
- MUS 25000 - Music Appreciation
- ENGL 31900 - Creative Writing
- ENGL 28600 - The Movies
- COM 34300 - Fundamentals Of Oral Interpretation
- THTR 20100 - Theatre Appreciation

### Physical Science (3 Credits)

Any Phys. Sci. course

### Philosophy (3 Credits)

- PHIL 10600 - Human Experience In Art Literature, Music, And Philosophy
- PHIL 11000 - Introduction To Philosophy
- PHIL 11100 - Ethics

### History (3 Credits)

- HIST 10400 - Introduction To The Modern World
- HIST 11000 - The Pre-Modern World
- HIST 15100 - American History To 1877
- HIST 15200 - United States Since 1877

## French Requirement (27 Credits)

Must take 9 courses from the following:

- FR 26100 - French Composition
- FR 36500 - French Conversation
- FR 46100 - Intermediate French Composition
- FR 46500 - Intermediate French Conversation
- FR 51100 - Advanced French Conversation

### French Literature

Two French Literature courses:

- FR 40500 - Introduction To French Literature I
- FR 40600 - Introduction To French Literature II

or

- FR 39000 - Special Topics In French

or

- FR 49000 - Topics In French

### French Culture

- FR 35000

### French Civilization

- FR 45000 - French Civilization

### French Electives (6 Credits)

Choose two from:

- FR 30700 - Commercial French
- FR 39000 - Special Topics In French
- FR 49000 - Topics In French
- FR 51500 - Advanced French Composition

### Total 126 Credits Required

## Foreign Language, BA, Concentration: Spanish

### Degree Requirements

#### PNW General Education Core (30 Credits)

#### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

#### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

#### Quantitative Reasoning (3 Credits)

- STAT 13000 - Statistics And Contemporary Life
- or
- MA 15300 - College Algebra

#### Natural Sciences (3 Credits)

Any Natural Science with Lab - Select from General Education Core list

#### Technology (3 Credits)

CIS 20400 or Select from Technology Core list

#### Humanities (3 Credits)

- HIST 10400 - Introduction To The Modern World

#### Social Sciences (6 Credits)

- SOC 10000 - Introductory Sociology
- PSY 12000 - Elementary Psychology

#### First-Year Experience (FYE) (3 Credits)

- FLL 10300 - Freshman Experience Worldviews

### Major Core (51 Credits)

- SPAN 10100 - Spanish Level I
- SPAN 10200 - Spanish Level II
- SPAN 20100 - Spanish Level III
- SPAN 20200 - Spanish Level IV
- ECON 10100 - Survey Of Economics
- ENGL 23100 - Introduction To Literature

## Spanish Requirement (33 Credits)

**Must take 11 courses from one of the groups below.**

### Spanish Non-Heritage Speakers Must Take:

- SPAN 26100 - Spanish Composition
- SPAN 30400 - Readings From The Hispanic World
- SPAN 30600 - Spanish Grammar
- SPAN 30700 - Commercial Spanish
- SPAN 36500 - Spanish Conversation
  
- SPAN 40500 - Introduction To Spanish Literature I  
or
- SPAN 40600 - Introduction To Spanish Literature II  
or
- SPAN 43500 - Spanish American Literature To Modernism  
or
- SPAN 43600 - Spanish American Literature From Modernism To Present
  
- SPAN 45100 - Spanish Civilization  
or
- SPAN 48100 - Spanish Culture
  
- SPAN 46100 - Intermediate Spanish Composition
- SPAN 46500 - Intermediate Spanish Conversation
  
- SPAN 48200 - Latin American Civilization  
or
- any Latin American culture or civilization
- FLL 36101 - The Nature Of Language

### Spanish Heritage Speakers Must Take:

- SPAN 30400 - Readings From The Hispanic World
- SPAN 30600 - Spanish Grammar
- SPAN 30700 - Commercial Spanish
- SPAN 31300 - Spanish For Spanish Speakers I (m)
- SPAN 31400 - Spanish For Spanish Speakers II (m)
  
- SPAN 40500 - Introduction To Spanish Literature I  
or
- SPAN 40600 - Introduction To Spanish Literature II  
or
- SPAN 43500 - Spanish American Literature To Modernism  
or
- SPAN 43600 - Spanish American Literature From Modernism To Present
  
- SPAN 45100 - Spanish Civilization  
or
- SPAN 48100 - Spanish Culture
  
- SPAN 48200 - Latin American Civilization  
or

- any Latin American culture or civilization
- SPAN 51100 - Advanced Spanish Conversation
- SPAN 51500 - Advanced Spanish Composition
- FLL 36101 - The Nature Of Language

### **Supplemental Core (39 Credits)**

#### **Additional Math or Science Course (3 Credits)**

Choose 1 course from:

- Any MA (except MA 11500), STAT, SCI, CIS course  
or
- PHIL 15000 - Principles Of Logic
- CIS 20400 - Introduction To Computer-Based Systems is highly recommended to fulfill general education requirements.

#### **Political Science (3 Credits)**

- POL 10100 - American Government And Politics
- POL 13000 - Introduction To International Relations
- POL 14100 - Governments Of The World

#### **Philosophy (3 Credits)**

- PHIL 10600 - Human Experience In Art Literature, Music, And Philosophy
- PHIL 11000 - Introduction To Philosophy
- PHIL 11100 - Ethics

#### **Aesthetics (3 Credits)**

Choose 1 course from:

- AD 25500 - Art Appreciation
- MUS 25000 - Music Appreciation
- ENGL 31900 - Creative Writing
- ENGL 28600 - The Movies
- COM 34300 - Fundamentals Of Oral Interpretation
- THTR 20100 - Theatre Appreciation

#### **Free Elective EXL (3 Credits)**

One free elective must be an EXL course. Recommend Study Abroad in Spain the summer before senior year.

#### **Free Electives or Minor (24 Credits)**

Any course 10000 level or higher or select a minor.

### **Total 120 Credits Required**

## **Foreign Language, BA, Concentration: Spanish Teaching**

### **Degree Requirements**

#### **PNW General Education Core (30 Credits)**

##### **English Composition (6 Credits)**

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

##### **Speech Communication (3 Credits)**

- COM 11400 - Fundamentals Of Speech Communication

##### **Quantitative Reasoning (3 Credits)**

- STAT 13000 - Statistics And Contemporary Life



or

- MA 15300 - College Algebra

### **Natural Sciences (3 Credits)**

Any Natural Science with Lab - Select from General Education Core list

### **Technology (3 Credits)**

CIS 20400 or Select from Technology Core list

### **Humanities (3 Credits)**

- POL 10100 - American Government And Politics

### **Social Sciences (3 Credits)**

- SOC 10000 - Introductory Sociology

### **Additional Credits (3 Credits)**

Any Physical Science Course

### **First-Year Experience (FYE) (3 Credits)**

- FLL 10300 - Freshman Experience Worldviews

### **Major Core (51 Credits)**

- SPAN 10100 - Spanish Level I
- SPAN 10200 - Spanish Level II
- SPAN 20100 - Spanish Level III
- SPAN 20200 - Spanish Level IV
- EDFA 20000 - History And Philosophy Of Education
- EDPS 22000 - Psychology Of Learning
- EDPS 26000 - Introduction To Special Education
- ECON 10100 - Survey Of Economics
- EDCI 35501 - Teaching and Learning K-12 Classroom
- EDCI 36600 - Use Of Assessment In The K-12 Classroom
- EDPS 37000 - Teaching Students With Diverse Learning Needs In K-12 Class
- EDCI 34200 - Strategies Of Foreign Language Instruction In Senior High, Junior High And Middle Schools
- EDCI 30900 - Reading In Middle And Secondary Schools: Methods And Problems
- EDCI 49700 - Supervised Teaching

### **Supplemental Core (42 Credits)**

#### **Aesthetics (3 Credits)**

Choose 1 course from:

- AD 25500 - Art Appreciation
- MUS 25000 - Music Appreciation
- ENGL 31900 - Creative Writing
- ENGL 28600 - The Movies
- COM 34300 - Fundamentals Of Oral Interpretation
- THTR 20100 - Theatre Appreciation

#### **Philosophy (3 Credits)**

- PHIL 10600 - Human Experience In Art Literature, Music, And Philosophy
- PHIL 11000 - Introduction To Philosophy
- PHIL 11100 - Ethics

#### **History (3 Credits)**

- HIST 10400 - Introduction To The Modern World
- HIST 11000 - The Pre-Modern World
- HIST 15100 - American History To 1877

- HIST 15200 - United States Since 1877

## Spanish Requirement (33 Credits)

Must take 11 courses:

### Spanish Non-Heritage Speakers Must Take:

- FLL 36101 - The Nature Of Language
- SPAN 26100 - Spanish Composition
- SPAN 30400 - Readings From The Hispanic World
- SPAN 30600 - Spanish Grammar
- SPAN 36500 - Spanish Conversation
- SPAN 46100 - Intermediate Spanish Composition
- SPAN 46500 - Intermediate Spanish Conversation
  
- SPAN 40500 - Introduction To Spanish Literature I  
or
- SPAN 40600 - Introduction To Spanish Literature II
  
- SPAN 43500 - Spanish American Literature To Modernism  
or
- SPAN 43600 - Spanish American Literature From Modernism To Present
  
- SPAN 45100 - Spanish Civilization  
or
- SPAN 48100 - Spanish Culture
  
- SPAN 48200 - Latin American Civilization  
or
- SPAN 41300 - Culture Of Spanish -Speaking Americans

### Spanish Heritage Speakers Must Take:

- FLL 36101 - The Nature Of Language
- SPAN 31300 - Spanish For Spanish Speakers I
- SPAN 31400 - Spanish For Spanish Speakers II
- SPAN 30400 - Readings From The Hispanic World
- SPAN 30600 - Spanish Grammar
  
- SPAN 40500 - Introduction To Spanish Literature I  
or
- SPAN 40600 - Introduction To Spanish Literature II
  
- SPAN 43500 - Spanish American Literature To Modernism  
or
- SPAN 43600 - Spanish American Literature From Modernism To Present
  
- SPAN 45100 - Spanish Civilization  
or
- SPAN 48100 - Spanish Culture
  
- SPAN 48200 - Latin American Civilization  
or
- SPAN 41300 - Culture Of Spanish -Speaking Americans

- SPAN 51100 - Advanced Spanish Conversation
- SPAN 51500 - Advanced Spanish Composition

## **Total 123 Credits Required**

## **Political Science, BA**

### **Degree Requirements**

#### **PNW General Education Core (30 Credits)**

##### **English Composition (6 Credits)**

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

##### **Speech Communication (3 Credits)**

- COM 11400 - Fundamentals Of Speech Communication

##### **Quantitative Reasoning (3 Credits)**

- STAT 13000 - Statistics And Contemporary Life
- or
- MA 15300 - College Algebra

##### **Natural Sciences (3 Credits)**

Any Natural Sciences with Lab - Select from General Education Core list

##### **Technology (3 Credits)**

CIS 20400 or Select from Technology Core list

##### **Humanities (3 Credits)**

Any 10000 level History course

##### **Social Sciences (6 Credits)**

- PSY 12000 - Elementary Psychology
- SOC 10000 - Introductory Sociology

##### **First-Year Experience (FYE) (3 Credits)**

- POL 20000 - Introduction To The Study Of Political Science

##### **Major Core (27 Credits)**

- POL 10100 - American Government And Politics
- ENGL 23100 - Introduction To Literature
- POL 20200 - Introduction To Political Theory
- POL 13000 - Introduction To International Relations
- POL 30000 - Introduction To Political Analysis
- FN 30300 - Essentials Of Nutrition
- ECON 10100 - Survey Of Economics
- POL 49100 - Political Science Senior Seminar
- POL 40100 - Practicum In Local Government

##### **Supplemental Core (63 Credits)**

##### **Foreign Language (12 Credits)**

Choose from French, German, Japanese, or Spanish. Must complete 4 semesters of the same foreign language.

##### **Philosophy (3 Credits)**

Choose any 10000 level PHIL course except PHIL 15000.

##### **Aesthetics (3 Credits)**

Choose 1 course from:

- AD 25500 - Art Appreciation
- MUS 25000 - Music Appreciation
- ENGL 31900 - Creative Writing
- PHIL 10600 - Human Experience In Art Literature, Music, And Philosophy
- THTR 20100 - Theatre Appreciation

### **American Political Science Elective (3 Credits)**

- POL 10000 - American Public Affairs
- POL 19000 - The Politics Of Change
- POL 30600 - The United States In The 1960's
- POL 31100 - Congress And The President
- POL 31500 - Public Opinion And Elections
- POL 33000 - Politics Of Lake County
- POL 34600 - Law And Society
- POL 35400 - Civil Liberties And The Constitution
- POL 36400 - Law, Ethics, And Public Policy
- POL 37200 - Indiana Government And Politics
- POL 41100 - Congress: Structure And Functioning
- POL 46000 - Judicial Politics
- POL 46100 - Constitutional Law I
- Other courses may be approved by the program advisor.

### **POL International Relations (3 Credits)**

- POL 30900 - The Middle East
- POL 43300 - International Organization
- POL 43500 - International Law
- POL 43900 - United States Foreign Policy Making
- and other courses as approved by the program advisor.

### **POL Theory (3 Credits)**

- POL 33000 - Politics Of Lake County
- POL 34900 - Intro To Jewish Studies
- POL 35300 - Current Political Ideologies
- POL 38800 - The World Of Ideas I
- POL 38900 - The World Of Ideas II
- POL 40400 - United States Policy Making Elite
- and other courses as approved by the program advisor.

### **Political Science Elective (12 Credits)**

Any POL course 30000 +

### **Free Electives (24 Credits)**

### **Total 120 Credits Required**

### **Minor**

### **American Government Minor**

### **Course Requirements (15 Credit Hours)**

### **Required Courses (6 Credits)**

- POL 20000 - Introduction To The Study Of Political Science
- POL 10000 - American Public Affairs

**OR**

- POL 10100 - American Government And Politics

**Elective Courses (9 Credits)****Choose Three:**

- POL 30600 - The United States In The 1960's
- POL 31100 - Congress And The President
- POL 31400 - The President And Policy Process
- POL 31500 - Public Opinion And Elections
- POL 33000 - Politics Of Lake County
- POL 34600 - Law And Society
- POL 35400 - Civil Liberties And The Constitution
- POL 36000 - Women And The Law
- POL 36400 - Law, Ethics, And Public Policy
- POL 37000 - Introduction To Comparative State Politics
- POL 37100 - Introduction To Comparative Urban Politics
- POL 37200 - Indiana Government And Politics
- POL 41000 - Political Parties And Politics
- POL 41100 - Congress: Structure And Functioning
- POL 46000 - Judicial Politics
- POL 46100 - Constitutional Law I

**French Minor**

Fifteen (15) credit hours including departmental credits for 20100 and 20200, one course must be composition and one in conversation.

Students will have to maintain a B- in all the Minor foreign language courses to obtain their Minor. Courses must be in the same language with a minimum grade of B-.

**Course Requirements (15 Credit Hours)****Required Courses (12 Credits)**

- FR 20100 - French Level III
- FR 20200 - French Level IV
- FR 26100 - French Composition
- FR 36500 - French Conversation

**Elective Course (3 Credits)**

One French Language Elective Course - 3.00 Credit Hours

**Global Studies Minor**

In our rapidly changing global political, economic, social and cultural environment, there is a growing need for American students to gain global cross-cultural knowledge and related skills, competences and values. An interdisciplinary minor in Global Studies can be readily combined with your major fields of study in various departments so that you are better prepared for a wide range of careers. Employers find highly desirable those graduates who have knowledge of world languages, histories, and cultural and business practices.

**Requirements for the Global Studies Minor**

Total minimum of 15-16 credits

- 6 credits in courses in global cross-cultural studies.
- 6 credits in courses in area studies.
- Level IV (3-4 credits) in a global language offered at Purdue University Northwest.

A maximum of six credits can overlap with other minors or majors.

*To minor in Global Studies, please make an appointment with your academic advisor.*

## Latin American Studies Minor

The minor in Latin American Studies provides students with the opportunity to acquire knowledge of Latin America and to sharpen their research, critical thinking, and written and oral skills. It will also assist students to live and work successfully in multicultural settings. It can provide an appropriate background for careers in business, journalism, government, teaching, or the nonprofit sector, or for graduate studies in one of the humanities or social sciences.

*Program:* Students will complete fifteen credit hours of undergraduate coursework that introduces them to the history, culture, language, and literature. Students are required to have on file a plan of study approved by one of the faculty in the Latin American Studies program. Students planning to complete the Latin American Studies Minor should enroll in Spanish to fulfill the language component of their general education degree requirement (three semesters).

With the advice and approval of a faculty member in the Latin American Studies minor, students develop a plan of study that is required to include a minimum of fifteen credit hours of study selected from among courses at the sophomore, junior and senior level (20000, 30000 or 40000 level courses). Appropriate graduate courses (50000 level) taken for undergraduate credit, may also be used to fulfill degree requirements. Any deviations from the approved program of study must be approved in writing by a faculty member in the Latin American Studies minor. Existing or new courses may be included in the Latin American Studies plan of study *only* if the content of the course is directed at the study of Latin American history, culture, language, or literature.

### Course Requirements (15 Credit Hours)

#### Required Course (3 Credits)

- LALS 10100 - Introduction To Latin American Studies

#### Elective Courses (12 Credits)

##### Choose Four:

- FLL 40500 - Globalization: Latin American Literature And Transnational Conflicts
- FLL 49000 - Special Topics In Foreign Languages And Literatures
- HIST 27100 - Introduction To Colonial Latin American History (1492-1810)
- HIST 27200 - Introduction To Modern Latin American History (1810 To The Present)
- HIST 30501 - Latin American History Through Film
- HIST 35201 - Revolution And Revolutionaries In 20th And 21st Century Latin America
- HIST 36110 - Environmental History Of Latin America
- HIST 36600 - Hispanic Heritage Of The United States
- HIST 40100 - Indigenous Traditions Of Latin America
- POL 30800 - United States Foreign Policy And Latin America
- SPAN 23500 - Spanish American Literature In Translation
- SPAN 28000 - Second-Year Spanish: Special Topics
- SPAN 33500 - The Literature Of The Spanish-Speaking Peoples In The United States
- Any other courses agreed upon by the Latin American Studies minor committee that meet the elective requirements set by the committee

## Political Communication Minor

### Course Requirements (18 Credit Hours)

#### Required Courses (12 Credits)

- COM 31800 - Principles Of Persuasion
- COM 51700 - Communication In Politics
- POL 20000 - Introduction To The Study Of Political Science
- POL 31400 - The President And Policy Process
- or
- POL 31500 - Public Opinion And Elections

## Elective Courses (6 Credits)

### Choose Two:

- COM 20100 - Introduction To Media Studies
- COM 22800 - Introduction To Communication Studies
- COM 22500 - Introduction To Rhetoric And Social Influence
- COM 31900 - The Rhetorical Tradition
- COM 44600 - Advertising Management
- POL 13000 - Introduction To International Relations
- POL 35400 - Civil Liberties And The Constitution

## Political Science Minor

### Minor in Political Science (15 credits)

Five (5) courses in Political Science, four (4) of which must be at the 20000 level or above.

*To minor in Political Science, please make an appointment with your academic advisor.*

## Spanish Minor

Fifteen (15) credit hours including departmental credits for 20100 and 20200, one course must be composition and one in conversation.

Students will have to maintain a B- in all the Minor foreign language courses to obtain their Minor. Courses must be in the same language with a minimum grade of B-.

### Course Requirements (15 Credit Hours)

#### Required Courses (6 Credits)

- SPAN 20100 - Spanish Level III
- SPAN 20200 - Spanish Level IV

#### Elective Courses (9 Credits)

Three (3) Spanish Language Elective Courses\*

\*Electives must be above 20200. Also SPAN 26100 and SPAN 36500 cannot be taken by heritage speakers of Spanish.

## Department of Psychology

### Bachelor of Arts

### Psychology, BA

#### Degree Requirements

#### PNW General Education Core (36 Credits Minimum)

#### English Composition (6 Credits)

- ENGL 10400 - English Composition I (*min. grade of C- required*)
- ENGL 10500 - English Composition II

#### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

#### Quantitative Reasoning (3 Credits)

- MA 15300 - College Algebra

#### Natural Sciences (6 Credits)

- One Lab Science Course - SCI 10500 - Invitation To Human Biology (*strongly recommended*)
- One Non-Lab Science **OR** One Additional Lab Science

#### Technology (3 Credits)

- CIS 20400 - Introduction To Computer-Based Systems

or

- any Computer Utilization course

### Humanities (3 Credits)

Any English Lit course

### Social Sciences (6 Credits)

- PSY 12000 - Elementary Psychology (*min. grade of C- required*)
- SOC 10000 - Introductory Sociology

### Additional Credits (3 Credits)

Any 10000 level History course

### First-Year Experience (FYE) (3 Credits)

- PSY 10300 - Psychology First Year Experience

### Major Core (24 Credits)

(*Minimum grade of C- required for all courses*)

- PSY 20100 - Introduction To Statistics In Psychology
- PSY 20300 - Introduction To Research Methods In Psychology
- PSY 20500 - Testing And Measurement
- PSY 33900 - Advanced Social Psychology
- PSY 32200 - Neuroscience Of Motivated Behavior
- PSY 31400 - Introduction To Learning
- PSY 31100 - Human Memory
- PSY 48000 - Field Experience In Psychology
- PSY 43000 - Systems And Theories Of Psychology

### Other Required Courses (60 Credits)

#### Foreign Language (12 Credits)

(*Minimum grade of C- required for all courses*)

- Spanish, French, German, Japanese, or American Sign Language. Must complete 4 semesters of the same foreign language.

#### Aesthetics (3 Credits)

The Department of Behavioral Sciences accepts the following:

- AD 25500 - Art Appreciation
- ENGL 40500
- ENGL 38600 - History Of Film To 1938
- ENGL 28600 - The Movies
- MUS 25000 - Music Appreciation
- PHIL 10600 - Human Experience In Art Literature, Music, And Philosophy
- THTR 20100 - Theatre Appreciation

#### Philosophy (3 Credits)

- Any 10000 level PHIL course, except PHIL 15000

#### Economics (3 Credits)

- ECON 10100 - Survey Of Economics

#### Political Science (3 Credits)

- Any 10000 level POL course

#### Psychology Electives (15 Credits)

(*Minimum grade of C- required for all courses*)

- Five PSY courses 30000 level or above

#### Electives (21 Credits)



- Free Electives/Minor Requirement

## **Total 120 Credits Required**

*Two courses in Experiential Learning are required for all students.*

*32 hours at the 30000-level and above must be taken at Purdue University Northwest.*

## **Bachelor of Science**

### **Psychology, BS**

#### **Degree Requirements**

#### **PNW General Education Core (30 Credits Minimum)**

##### **English Composition (6 Credits)**

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

##### **Speech Communication (3 Credits)**

- COM 11400 - Fundamentals Of Speech Communication

##### **Quantitative Reasoning (3 Credits)**

- MA 15300 - College Algebra

##### **Natural Sciences (3 Credits)**

Select from the Natural Sciences Core list

##### **Technology (3 Credits)**

Select from the Technology Core list

##### **Humanities (3 Credits)**

Select from the Humanities Core list

##### **Social Sciences (3 Credits)**

Select from the Social Sciences Core list

##### **Additional Credits (3 Credits)**

Select a course from any Core list, except FYE

##### **First-Year Experience (FYE) (3 Credits)**

- PSY 10300 - Psychology First Year Experience

##### **Supplemental Core (36 Credits)**

##### **Foreign Language (12 Credits)**

(credit in the fourth semester required)

American Sign Language, German, Spanish

##### **U.S. Tradition (3 Credits)**

- HIST 15100 - American History To 1877
- POL 10100 - American Government And Politics

##### **Western Heritage (3 Credits)**

- HIST 10400 - Introduction To The Modern World
- PHIL 11000 - Introduction To Philosophy

##### **Global Cultures (3 Credits)**

- HIST 10500 - Survey Of Global History
- PHIL 23100 - Religions Of The West
- POL 34500 - West European Democracies In The Post-Industrial Era

##### **Literature and the Arts (3 Credits)**

- AD 11300 - Basic Drawing

- MUS 25000 - Music Appreciation
- THTR 20100 - Theatre Appreciation

### **Racial and Ethnic Diversity (3 Credits)**

- ANTH 37900 - Native American Cultures
- HIST 40100 - Indigenous Traditions Of Latin America
- SOC 31000 - Racial And Ethnic Diversity

### **Gender Issues (3 Credits)**

- ANTH 23000 - Gender Across Cultures
- PHIL 40800 - Philosophy Of Love And Friendship
- SOC 31501 - Gender In Society

### **Social Ethics (3 Credits)**

- PHIL 11100 - Ethics
- SOC 22000 - Social Problems

### **Individual and Society (3 Credits)**

- ANTH 10000 - Introduction To Anthropology
- COM 25000 - Mass Communication And Society

### **Major Core (33 Credits)**

- PSY 12000 - Elementary Psychology
- PSY 20100 - Introduction To Statistics In Psychology
- PSY 20300 - Introduction To Research Methods In Psychology
- PSY 24000 - Introduction To Social Psychology
- PSY 32500 - Professional And Ethical Issues In Psychology
- PSY 34200 - Introduction To Psychology Of Personality
- PSY 35000 - Abnormal Psychology
- PSY 36000 - Developmental Psychology
- PSY 37500 - Approaches To Counseling And Psychotherapy
- PSY 49200 - Internship In Psychology
- PSY 49800 - Senior Research

### **Psychology Tracks (6 Credits)**

Choose one:

#### **Developmental Psychology Track**

- PSY 23500 - Child Psychology
- PSY 36700 - Adult Development And Aging

#### **Forensic Psychology Track**

- PSY 20200 - Introduction To Quantitative Topics In Psychology
- PSY 33200 - Forensic Psychology

#### **Cognitive Psychology Track**

- PSY 20000 - Introduction To Cognitive Psychology
- PSY 31100 - Human Memory

#### **General Psychology Track**

- Psychology Class 200 level + Credit Hours: 3.00
- Psychology Class 300 level + Credit Hours: 3.00

### **Electives (15 Credits)**

Additional Psychology courses offered

### **Total 120 Credits Required**

## Minor

### Psychology Minor

#### Course Requirements (15 Credit Hours)

- PSY 12000 - Elementary Psychology \*
- PSY 2XXXX\*
- PSY 3XXXX or 4XXXX\*
- PSY 3XXXX or 4XXXX\*
- PSY 3XXXX or 4XXXX\*

**(C- or above required in all courses; 2.0 cumulative GPA required for courses counting toward the minor)**

\*Equivalent transfer work may also be accepted to fulfill minor requirements. Please speak with the Psychology advisor for more information.

Students must have a declared major before declaring a minor. The Psychology Minor may not be pursued by students who complete the Psychology Option for the Bachelor in Behavioral Sciences degree or the Bachelor of Science or Arts in Psychology degrees.

## School of Education and Counseling

### Bachelor of Arts

#### Elementary Education, BA, Concentration: Reading

You can earn a Bachelor of Arts degree in Elementary Education at Purdue University Northwest. A student must meet Gate requirements in order to proceed with their education degree. One requirement of the Gate System is the successful completion of the CASA tests. The degree meets licensing requirements of the Indiana Professional Standards Board and the Purdue University School of Education. It includes a 16-week student teaching requirement, completed at an area elementary school.

#### Degree Requirements

##### PNW General Education Core (30 Credits)

##### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

##### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

##### Quantitative Reasoning (3 Credits)

- MA 13700 - Mathematics For Elementary Teachers I

##### Natural Sciences (3 Credits)

- SCI 11200 - Introduction To The Physical Sciences I

##### Technology (3 Credits)

- EDCI 27000 - Introduction To Educational Technology And Computing

##### Humanities (3 Credits)

- HIST 15100 - American History To 1877

##### Social Sciences (3 Credits)

- POL 10100 - American Government And Politics

##### Additional Credits (3 Credits)

- HIST 15200 - United States Since 1877

##### First-Year Experience (3 Credits)

- EDST 20000 - History And Philosophy Of Education

## Major Core (48 Credits)

- AD 23800 - Integrated Fine Arts
- EDPS 22000 - Psychology Of Learning
- EDCI 28500 - Multiculturalism And Education
- EDCI 31500 - Teaching Mathematics In The Elementary School
- EDCI 31600 - Teaching Social Studies In The Elementary School
- EDCI 31700 - Teaching Science In The Elementary School
- EDCI 46500 - Assessment In The Elementary School
- EDCI 49600 - Student Teaching In The Elementary School
- EDPS 26500 - The Inclusive Classroom
- EDPS 43000 - Creating And Managing Learning Environments
- HK 32400 - Health, Wellness, And Physical Education
- EDCI 23500 - Indiana History, Geography, and Economics for Educators

## Other Required Courses (21 Credits)

- EAS 13000 - Introductory Earth Science for Elementary Education
- EAS 39100 - Topics In Earth And Atmospheric Sciences
- HIST 10400 - Introduction To The Modern World
- MA 13800 - Mathematics For Elementary Teachers II
- MA 13900 - Mathematics For Elementary Teachers III
- SCI 11400 - Introduction to Life Science

### Choose One:

- ENGL 20100 - The Nature Of Literary Study
- ENGL 23100 - Introduction To Literature
- ENGL 23800 - Introduction To Fiction
- ENGL 35000 - Survey Of American Literature From Its Beginnings To 1865

## Concentration Required Courses (21 Credits)

- EDCI 23000 - Academic Language in Education
- EDCI 31100 - Media For Children
- EDCI 32200 - English For New Language Learners
- EDCI 36203 - Literacy Instruction in K-3 Classrooms
- EDCI 36204 - Literacy Instruction in 4-6 Classrooms
- EDCI 36800 - Literacy Intervention Strategies for Diverse Learners

## Total 120 Credits Required

## **Elementary Education, BA, Concentration: Special Needs**

### Degree Requirements

#### PNW General Education Core (30 Credits)

#### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

#### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

#### Quantitative Reasoning (3 Credits)

- MA 13700 - Mathematics For Elementary Teachers I

#### Natural Sciences (3 Credits)

- SCI 11200 - Introduction To The Physical Sciences I

### Technology (3 Credits)

- EDCI 32300 - Educational Technology For Teaching And Learning

### Humanities (3 Credits)

- HIST 15100 - American History To 1877

### Social Sciences (3 Credits)

- POL 10100 - American Government And Politics

### Additional Credits (3 Credits)

- HIST 15200 - United States Since 1877

### First-Year Experience (3 Credits)

- EDST 20000 - History And Philosophy Of Education

### Major Core (70 Credits)

- EDPS 26000 - Introduction To Special Education
- EDCI 35501 - Teaching and Learning K-12 Classroom
- EDCI 31100 - Media For Children
- EDCI 36600 - Use Of Assessment In The K-12 Classroom
- EDPS 45000 - Teaching Students With Disabilities
- EDPS 37000 - Teaching Students With Diverse Learning Needs In K-12 Class
- EDCI 32100 - Literacy And The Young Child
- EDCI 30400 - Literacy And Middle Childhood
- EDCI 31600 - Teaching Social Studies In The Elementary School
- EDCI 30001 - Lifelong Health And Wellness For Teachers And Children
- EDCI 31500 - Teaching Mathematics In The Elementary School
- EDCI 31700 - Teaching Science In The Elementary School
- EDPS 38000 - Special Education Law For Teachers
- EDCI 49700 - Supervised Teaching
- EDCI 49900 - Supervised Teaching Or Practicum In An Endorsement Area
- EDCI 23500 - Indiana History, Geography, and Economics for Educators
- EDCI 28500 - Multiculturalism And Education
- EDPS 22000 - Psychology Of Learning
- EDPS 42000 - Creating And Managing The Inclusive Classroom

### Other Required Courses (27 Credits)

- AD 20300 - Art Activities For Elementary Teachers
- MUS 20300 - Music For Elementary Teachers
- MA 13800 - Mathematics For Elementary Teachers II
- MA 13900 - Mathematics For Elementary Teachers III
- EAS 13000 - Introductory Earth Science for Elementary Education
- SCI 11400 - Introduction to Life Science
- EAS 39100 - Topics In Earth And Atmospheric Sciences
  
- HIST 10400 - Introduction To The Modern World  
or
- HIST 10500 - Survey Of Global History

### Foreign Language (3 Credits)

3rd semester foreign language only unless ASL (American Sign Language). Required to complete up through level 3 (20100).

Free Electives (2 Credits)

Total 127 Credits Required

## **Bachelor of Science**

### **Early Childhood Education, BS, Concentration: Reading**

Purdue University Northwest offers a degree in Early Childhood Education which prepares candidates for the Indiana initial teaching license, Early Childhood Generalist, Prek- Grade 3. Through course work, field experiences, practicum and student teaching, candidates gain knowledge, acquire skills and develop dispositions to effectively integrate theory with practice, as outlined in the National Association for the Education of Young Children Professional Preparation Standards. Graduates of the program are highly qualified early childhood professionals committed to supporting families and providing all children with developmentally appropriate learning environments and instruction. Formal admission to the program is required, including passage of the basic skills assessment in math, reading and writing (CASA).

### **Degree Requirements**

**PNW General Education Core (30 Credits)**

**English Composition (6 Credits)**

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

**Speech Communication (3 Credits)**

- COM 11400 - Fundamentals Of Speech Communication

**Quantitative Reasoning (3 Credits)**

- MA 13700 - Mathematics For Elementary Teachers I

**Natural Sciences (3 Credits)**

- SCI 11200 - Introduction To The Physical Sciences I

**Technology (3 Credits)**

- EDCI 27000 - Introduction To Educational Technology And Computing

**Humanities (3 Credits)**

- HIST 10400 - Introduction To The Modern World
- or
- HIST 10500 - Survey Of Global History

**Social Sciences (3 Credits)**

- PSY 12000 - Elementary Psychology

**Additional Credits (3 Credits)**

- SCI 11400 - Introduction to Life Science

**First-Year Experience (3 Credits)**

- EDST 27000 - Early Childhood Education

**Major Core (52 Credits)**

- EDCI 27600 - Child, Family, School And Community Partnerships
- EDCI 37101 - Integrated Curriculum in Early Childhood: Creative and Affective Domains
- EDCI 37201 - Integrated Curriculum in Early Childhood: Cognitive Domains
- EDCI 37301 - Expressive Arts/Social Studies in Kindergarten and Primary Grades
- EDCI 37401 - Science and Math in Kindergarten and Primary Grades
- EDCI 47000 - Practicum And Seminar In Early Childhood Programs
- EDCI 49600 - Student Teaching In The Elementary School
- EDPS 23600 - Developmental Theory And Practice In Early Childhood Education
- EDPS 27500 - Observation, Assessment And Documentation

- EDPS 27600 - Young Children With Exceptional Needs
- EDPS 27700 - Nurturing And Guiding The Young Child
- HK 27200 - Health, Safety And Nutrition For Young Children

### Other Required Courses (21 Credits)

- ENGL 22700 - Elements Of Linguistics
- MA 13800 - Mathematics For Elementary Teachers II
- MA 13900 - Mathematics For Elementary Teachers III
- PSY 23500 - Child Psychology
- EAS 13000 - Introductory Earth Science for Elementary Education

- HIST 15100 - American History To 1877  
or
- HIST 15200 - United States Since 1877

Choose One:

- ENGL 20100 - The Nature Of Literary Study
- ENGL 23100 - Introduction To Literature
- ENGL 23800 - Introduction To Fiction
- ENGL 35000 - Survey Of American Literature From Its Beginnings To 1865

### Concentration Required Courses (17 Credits)

- EDCI 31000 - Literacy And The Young Child
- EDCI 31100 - Media For Children
- EDCI 32200 - English For New Language Learners
- EDCI 36203 - Literacy Instruction in K-3 Classrooms
- EDCI 36800 - Literacy Intervention Strategies for Diverse Learners

### Total 120 Credits Required

## Secondary Education, BS, Concentration: Chemistry

### Degree Requirements

#### PNW General Education Core (39 Credits)

#### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

#### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

#### Quantitative Reasoning (10 Credits)

- MA 16700 - Plane Analytical Geometry & Calculus I
- MA 16900 - Plane Analytical Geometry And Calculus II

#### Natural Sciences (8 Credits)

- CHM 11500 - General Chemistry
- CHM 11600 - General Chemistry

#### Technology (3 Credits)

- EDCI 27000 - Introduction To Educational Technology And Computing

#### Social Sciences (3 Credits)

- PSY 12000 - Elementary Psychology

#### Humanities (3 Credits)

- EDST 20000 - History And Philosophy Of Education

### First-Year Experience (3 Credits)

- EDCI 10500 - Introduction To Teaching

### Major Core (85 Credits)

- EDCI 10500 - Introduction To Teaching
- CHM 26100 - Organic Chemistry
- CHM 26300 - Organic Chemistry Laboratory
- MA 26100 - Multivariate Calculus
- EDCI 20500 - Exploring Teaching As A Career
- PHYS 15200 - Mechanics
- CHM 26200 - Organic Chemistry
- CHM 26400 - Organic Chemistry Laboratory
- EDCI 28600 - Multiculturalism In Secondary Schools
- PHYS 26100 - Electricity And Optics
- CHM 32100 - Analytical Chemistry I
- EDPS 30600 - Adolescent And Young Adult Development
- EDPS 30700 - Classroom Climate In Secondary Schools
- CHM 33300 - Principles Of Biochemistry
- ASTR 26300 - Descriptive Astronomy: The Solar System
- CHM 37200 - Physical Chemistry
- EDPS 30800 - Exceptional Learners-Secondary
- EDCI 32200 - English For New Language Learners
- ASTR 26400 - Descriptive Astronomy: Stars And Galaxies
- EAS 11300 - Introduction To Environmental Science
- PSY 25100 - Health Psychology
- CHM 48100 - Environmental Chemistry
- EDCI 34600 - Strategies Of Science Instruction In Senior High, Junior High And Middle Schools
- EDCI 30900 - Reading In Middle And Secondary Schools: Methods And Problems
- EDCI 49500 - Student Teaching In The Secondary Classroom

### Total 122 Credits Required

### Degree Map

Secondary Education, BS, Concentration: Chemistry, Degree Map

## Secondary Education, BS, Concentration: Life Science

### Degree Requirements

#### PNW General Education Core (32 Credits)

#### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

#### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

#### Quantitative Reasoning (3 Credits)

- MA 22300 - Introductory Analysis I

#### Natural Sciences (8 Credits)

- CHM 11500 - General Chemistry



- CHM 11600 - General Chemistry

### Technology (3 Credits)

- EDCI 27000 - Introduction To Educational Technology And Computing

### Social Sciences (3 Credits)

- PSY 12000 - Elementary Psychology

### Humanities (3 Credits)

- Select a course from the Humanities Core list

### First-Year Experience (3 Credits)

- EDST 20000 - History And Philosophy Of Education

### Major Core (74 Credits)

- EDCI 10500 - Introduction To Teaching
- BIOL 10100 - Introductory Biology
- BIOL 10200 - Introductory Biology
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- BIOL 28600 - Introduction To Ecology And Evolution
- BIOL 28800 - Introductory Field Ecology
- EDCI 20500 - Exploring Teaching As A Career
- CHM 25500 - Organic Chemistry
- CHM 25501 - Organic Chemistry Laboratory
- CHM 25600 - Organic Chemistry
- CHM 25601 - Organic Chemistry Laboratory
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- EDCI 28600 - Multiculturalism In Secondary Schools
- PHYS 22000 - General Physics
- EDPS 30600 - Adolescent And Young Adult Development
- EDPS 30700 - Classroom Climate In Secondary Schools
- STAT 30100 - Elementary Statistical Methods
- EDPS 30800 - Exceptional Learners-Secondary
- EDCI 32200 - English For New Language Learners
- EDCI 30900 - Reading In Middle And Secondary Schools: Methods And Problems
- EDCI 34600 - Strategies Of Science Instruction In Senior High, Junior High And Middle Schools
- EDCI 49500 - Student Teaching In The Secondary Classroom

### Other Required Courses (24 Credits)

#### Science Electives (24 Credits)

Choose eight science courses. Two of each subject - Ecology & Environment, Molecular & Cellular, Structure & Function, and Evolution.

### Total 130 Credits Required

### Degree Map

Secondary Education, BS, Concentration: Life Science, Degree Map

## Secondary Education, BS, Concentration: Mathematics

### Degree Requirements

#### PNW General Education Core (32 Credits)

### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

### Quantitative Reasoning (5 Credits)

- MA 16700 - Plane Analytical Geometry & Calculus I

### Natural Sciences (6 Credits)

- ASTR 26300 - Descriptive Astronomy: The Solar System
- EAS 11300 - Introduction To Environmental Science

### Technology (3 Credits)

- EDCI 27000 - Introduction To Educational Technology And Computing

### Social Sciences (3 Credits)

- PSY 12000 - Elementary Psychology

### Humanities (3 Credits)

Select a course from the Humanities Core list

### First-Year Experience (FYE) (3 Credits)

- EDST 20000 - History And Philosophy Of Education

### Major Core (88 Credits)

- EDCI 10500 - Introduction To Teaching
- EDST 20000 - History And Philosophy Of Education
- MA 16900 - Plane Analytical Geometry And Calculus II
- CHM 11500 - General Chemistry
- CHM 11600 - General Chemistry
- EDCI 20500 - Exploring Teaching As A Career
- STAT 35000 - Introduction To Statistics
- MA 26100 - Multivariate Calculus
- EDCI 28600 - Multiculturalism In Secondary Schools
- MA 26200 - Linear Algebra And Differential Equations
- CS 20600 - Computer Algebra And Programming
- PSY 25100 - Health Psychology
- EDPS 30600 - Adolescent And Young Adult Development
- EDPS 30700 - Classroom Climate In Secondary Schools
- MA 34800 - Discrete Mathematics
- MA 33000 - Concepts In Geometry
- EDPS 30800 - Exceptional Learners-Secondary
- EDCI 32200 - English For New Language Learners
- MA 35100 - Elementary Linear Algebra
- STAT 31100 - Introductory Probability
- EDCI 42500 - Teaching Of Mathematics In Secondary Schools
- MA 40100 - Problem Solving In Mathematics
- MA 45300 - Elements Of Algebra I
- EDCI 30900 - Reading In Middle And Secondary Schools: Methods And Problems
- EDCI 49500 - Student Teaching In The Secondary Classroom

### Total 120 Credits Required

## Degree Map

Secondary Education, BS, Concentration: Mathematics, Degree Map

## Secondary Education, BS, Concentration: Physical Science

### Degree Requirements

#### PNW General Education Core (39 Credits)

##### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

##### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

##### Quantitative Reasoning (10 Credits)

- MA 16300 - Integrated Calculus Analysis Geometry I
- MA 16400 - Integrated Calculus Analysis Geometry II

##### Natural Sciences (8 Credits)

- CHM 11500 - General Chemistry
- CHM 11600 - General Chemistry

##### Technology (3 Credits)

- EDCI 27000 - Introduction To Educational Technology And Computing

##### Social Sciences (3 Credits)

- PSY 12000 - Elementary Psychology

##### Humanities (3 Credits)

Select a course from the Humanities Core list

##### First-Year Experience (FYE) (3 Credits)

- EDST 20000 - History And Philosophy Of Education

##### Major Core (74 Credits)

- EDCI 10500 - Introduction To Teaching
- EDCI 20500 - Exploring Teaching As A Career
- CHM 32100 - Analytical Chemistry I
- CHM 25500 - Organic Chemistry
- CHM 25501 - Organic Chemistry Laboratory
- PHYS 22000 - General Physics
- EDCI 28600 - Multiculturalism In Secondary Schools
- PHYS 15200 - Mechanics
- PHYS 26100 - Electricity And Optics
- EDPS 30600 - Adolescent And Young Adult Development
- EDPS 30700 - Classroom Climate In Secondary Schools
- PSY 25100 - Health Psychology
- CHM 48100 - Environmental Chemistry
- CHM 37200 - Physical Chemistry
- EDPS 30800 - Exceptional Learners-Secondary
- EDCI 32200 - English For New Language Learners
- PHYS 34200 - Modern Physics and Lab
- ASTR 26300 - Descriptive Astronomy: The Solar System
- EDCI 30900 - Reading In Middle And Secondary Schools: Methods And Problems

- EDCI 34600 - Strategies Of Science Instruction In Senior High, Junior High And Middle Schools
- EDCI 49500 - Student Teaching In The Secondary Classroom

### Other Required Courses (4 Credits)

Science Elective 30000 level or above

### Total 120 Credits Required

### Degree Map

Secondary Education, BS, Concentration: Physical Science, Degree Map

## Master of Science in Education

### Education, Human Services Counseling Concentration, MSED

The College of Education & Counseling offers 3 tracks in counseling: Mental Health Counseling, School Counseling, and Human Services, as well as a Certification in Addictions Counseling. The concentrations in Mental Health and School Counseling, as well as the Certification in Addictions Counseling lead to licensure. The Mental Health Counseling and the School Counseling programs are accredited by the Council for Accreditation of Counseling & Related Educational Programs (CACREP). The Certification in Addictions courses are approved by the Indiana Counselors Association on Alcohol and Drug Abuse (ICAADA). The Human Services Counseling track is a non-licensure degree program. However, additional courses can be taken to complete the degree in Mental Health Counseling if a decision to do so is made before the internship has begun and with permission of the faculty. All students accepted into our program must obtain a limited criminal history check within the first week of the semester in which they begin.

### Program Requirements

Non-licensure program

- EDPS 50000 - Group Counseling Theories And Techniques
- EDPS 50300 - Introduction To Mental Health Counseling
- EDPS 50700 - Counseling Multicultural And Diverse Populations
- EDPS 52800 - Research In Counseling
- EDPS 53900 - Ethics And Professional Identity For Mental Health Counselors
- EDPS 52100 - Counseling And Psychopathology
- EDPS 62000 - Counseling Seminar (Electives); Diverse Topics (4 electives, 12 credit hours)
- EDPS 69500 - Internship In Education (300 hours; 3 credit hours)

### Total 33 Credits Required

### Education, Mental Health Counseling, MSED

The College of Education & Counseling offers 3 tracks in counseling: Mental Health Counseling, School Counseling, and Human Services, as well as a Certification in Addictions Counseling. The concentrations in Mental Health and School Counseling, as well as the Certification in Addictions Counseling lead to licensure. The Mental Health Counseling and the School Counseling programs are accredited by the Council for Accreditation of Counseling & Related Educational Programs (CACREP). The Certification in Addictions courses are approved by the Indiana Counselors Association on Alcohol and Drug Abuse (ICAADA). The Human Services Counseling track is a non-licensure degree program. However, additional courses can be taken to complete the degree in Mental Health Counseling if a decision to do so is made before the internship has begun and with permission of the faculty. All students accepted into our program must obtain a limited criminal history check within the first week of the semester in which they begin.

### Program Requirements

- EDPS 50000 - Group Counseling Theories And Techniques
- EDPS 50300 - Introduction To Mental Health Counseling
- EDPS 52100 - Counseling And Psychopathology
- EDPS 52200 - Crisis Intervention And Emergency Management
- EDPS 50500 - Foundations Of Career Development And Assessment

- EDPS 50700 - Counseling Multicultural And Diverse Populations
- EDPS 53100 - Introduction To Measurement And Evaluation
- EDPS 52800 - Research In Counseling
- EDPS 59100 - Special Topics In Education (Human Growth and Life Span Development)
- EDPS 52100 - Counseling And Psychopathology
- EDPS 60000 - Counseling Theories And Techniques
- EDPS 60100 - Counseling Theories And Techniques Laboratory
- EDPS 61000 - School Counseling Practicum
- EDPS 53900 - Ethics And Professional Identity For Mental Health Counselors
- EDPS 59100 - Special Topics In Education (Addictions)
- EDPS 62000 - Counseling Seminar (Electives); Diverse Topics (3 electives, 9 credit hours)
- EDPS 69500 - Internship In Education (900 hours; 9 credit hours)

## **Total 60 Credits Required**

### **Education, School Counseling, MEd**

The College of Education & Counseling offers 3 tracks in counseling: Mental Health Counseling, School Counseling, and Human Services, as well as a Certification in Addictions Counseling. The concentrations in Mental Health and School Counseling, as well as the Certification in Addictions Counseling lead to licensure. The Mental Health Counseling and the School Counseling programs are accredited by the Council for Accreditation of Counseling & Related Educational Programs (CACREP). The Certification in Addictions courses are approved by the Indiana Counselors Association on Alcohol and Drug Abuse (ICAADA). The Human Services Counseling track is a non-licensure degree program. However, additional courses can be taken to complete the degree in Mental Health Counseling if a decision to do so is made before the internship has begun and with permission of the faculty. All students accepted into our program must obtain a limited criminal history check within the first week of the semester in which they begin.

## **Program Requirements**

- EDPS 50000 - Group Counseling Theories And Techniques
- EDPS 50100 - Introduction To School Counseling
- EDPS 50500 - Foundations Of Career Development And Assessment
- EDPS 50700 - Counseling Multicultural And Diverse Populations
- EDPS 53100 - Introduction To Measurement And Evaluation
- EDPS 52800 - Research In Counseling
- EDPS 59100 - Special Topics In Education (Human Growth and Life Span Development)
- EDPS 60000 - Counseling Theories And Techniques
- EDPS 60100 - Counseling Theories And Techniques Laboratory
- EDPS 60900 - Program Development And Organization In Human Services
- EDPS 61000 - School Counseling Practicum
- EDPS 59100 - Special Topics In Education (Counseling Children and Adolescents)
- EDPS 59100 - Special Topics In Education (Seminar: Addictions)
- EDPS 62000 - Counseling Seminar (Electives); Diverse Topics (2 electives, 6 credit hours)
- EDPS 69500 - Internship In Education (600 hours; 6 credit hours)

## **Total 51 Credits Required**

### **Education, Special Education, MEd**

## **Program Requirements**

A professional portfolio is required

### **Foundations (3 Credits)**

- EDPS 59100 - Special Topics In Education (Integrating Students with Special Needs)

## Special Education Core (21 Credits)

Select six classes of the following courses:

- EDPS 56300 - Identification, Evaluation, And Assessment Of Exceptional Individuals
- EDPS 56500 - Intervention Strategies And Research
- EDPS 59100 - Special Topics In Education (Applied Behavior Analysis for Teachers)
- EDPS 66400 - Seminar In Special Education (Collaboration)
- EDPS 66400 - Seminar In Special Education (Special Education Law)
- EDPS 59100 - Special Topics In Education (Autism Spectrum Disorders)
- EDPS 59500 - Internship in Education

## Related (6 Credits)

Select two of the following courses:

- EDCI 51100 - Teaching Mathematics In The Elementary School
- EDCI 59100 - Special Topics In Education (Literacy Problems: Evaluation and Remediation)
- EDCI 59100 - Special Topics In Education (Human Issues in Technology)

## Total 30 Credits Required

## Graduate Certificate

## Addiction Counseling Graduate Certificate

## Special Requirements

- Only candidates accepted into the certification program or any program within the Department of Counseling & Development may enroll in these courses. Enrollment is strictly limited to these programs.
- The courses must be completed with a grade of B or better. A grade of C in any course will be grounds for dismissal from the certification program in addiction counseling.
- Courses need NOT be taken sequentially.
- A limited criminal history check must be submitted by each student before his/her first class.

## Program Requirements

- EDPS 59100 - Special Topics In Education (Theories of Addiction Counseling and Psychopharmacology)
- EDPS 59100 - Special Topics In Education (Seminar I: Diversity, HIV/AIDS, and Dual Diagnosis)
- EDPS 59100 - Special Topics In Education (Seminar II: Ethics, Criminal Justice, and Social Systems)
- EDPS 59100 - Special Topics In Education (Recovery and Relapse)
- EDPS 59100 - Special Topics In Education (Techniques of Addiction Counseling: Counseling Skills, Groups and Processes)
- EDPS 59100 - Special Topics In Education (Practicum)

## Total 18 Credits Required

## Non-Academic

## Director of Exceptional Needs License Program (Special Education Director's License)

This program is intended for those who already have a master's degree and are seeking licensure. It is also intended for those who already have special education licensure, experience and background. The intent is to couple the Exceptional Needs Director's License with the Building Level Administrator's License whenever possible. However, a master's degree can be worked into the program for those who do not yet have one. Also, additional special education course work may be built into the program for those who need it.

## Program Requirements

## Special Education/Foundation Block (12 Credits)

- EDCI 58500 - Multicultural Education

- EDPS 53000 - Advanced Educational Psychology
- EDPS 53300 - Introduction To Educational Research I: Methodology
- EDPS 66400 - Seminar In Special Education (Education Law)
- EDFA 60800 - Business Management In Education

### Administration Block (28 Credits)

must be taken in sequence

- EDFA 51200 - Foundations Of Educational Administration
- EDFA 60900 - Legal Aspects Of American Education
- EDFA 61000 - Supervision Of Instruction And Instructional Personnel
- EDFA 51600 - School-Community Relations
- EDFA 51700 - Legal Aspects in American Education II
- EDCI 58000 - Foundations Of Curriculum
- EDFA 53900 - School Administration: The Effective School Executive
- EDFA 69500 - Internship In Education (Special Education)
- EDFA 69500 - Internship In Education (Administration) (4-hour course)

### Total 40 Credits Required

## Expressive Arts Counseling

This grouping of courses is only open to graduate students in counseling and to counselors and social workers for the purpose of professional development. Note: These classes can be used for licensure renewal and as electives, but they do not lead to licensure as an expressive arts counselor.

Note: Completed coursework will be listed on a transcript; however this is an informal program. Completion of this group of courses does not award a degree or formal certificate.

### Program Requirements

- EDPS 59100 - Special Topics In Education (Symbolism in Expressive Arts Therapy)
- EDPS 51200 - Expressive Arts: Painting, Poetry, And Dreams
- EDPS 50900 - Expressive Arts: Music, Movement, And Spiritual Expression
- EDPS 51100 - Expressive Arts Professional Project: Healing Through The Arts

### Note

**Check the website** <http://academics.pnw.edu/education/> **for additional Graduate Program options.**

- The graduate program in Educational Administration will be approved and open for admissions soon.
- The graduate program in Instructional Technology will be approved and open for admissions soon.

### Total 12 Credits Required

## LMHC Track, Mental Health Counselor License

For those school counselors who also have taken the additional courses required for licensure as a mental health counselor in Indiana. Dr. Hollingsworth will review school counseling transcripts to assure the courses are met for the LMHC. The LMHC track is specifically designed to meet the needs of school counseling graduates that currently hold our 51-credit hour master's degree. The LMHC program builds on our 51-credit hour program for school counselors. This 12 credit hour track aligns with the State of Indiana standards for the LMHC license. The program consists of three content courses, each 3 credits, and an advanced internship placement (300 hours/3 credits) in a mental health site. Students may need to travel for internship sites. It is the state licensure board's decision as to eligibility for the LMHCA and LMHC.

### Program Requirements

- EDPS 50300 - Introduction To Mental Health Counseling
- EDPS 52100 - Counseling And Psychopathology
- EDPS 53900 - Ethics And Professional Identity For Mental Health Counselors
- EDPS 69500 - Internship In Education (in a mental health setting/3 credits/300 hours)

## Total 12 Credits Required

Please note: You must have 60 credit hours on your transcript, including 9 credits of internship to be eligible for licensure as a LMHCA or LMHC in Indiana. Visit our website to obtain additional information about the requirements for licensure as a mental health counselor.



# College of Nursing

## College of Nursing

*Lisa Hopp, Ph.D., Dean*

<http://academics.pnw.edu/nursing>

The College of Nursing offers innovative programs to meet the professional needs of students for entry into practice to the Doctor of Nursing Practice. The National League for Nursing has recognized the College of Nursing as a Center of Excellence in Nursing Education, one of just 40 institutions to hold this recognition. The College also houses the Indiana Center for Evidence Based Nursing Practice, a Joanna Briggs Center of Excellence. The Center collaborates globally with other healthcare groups to improve health outcomes through the integration of evidence based practice in nursing education and practice.

The College of Nursing offerings include:

- Bachelor of Science in Nursing, accepting direct admissions from high school, transfer and change of degree option students
- Accelerated Bachelor of Science in Nursing option, accepting students who already hold a baccalaureate or higher degree
- Bachelor of Science in Nursing, completion degree accepting students who already hold an RN license and wish to obtain a baccalaureate degree (RN to BSN); offered entirely online
- Master of Science with a major in nursing with concentrations in adult-gerontology clinical nurse specialist and family nurse practitioner practice; a post-master's certificate in adult-gerontology clinical nurse specialist and nurse educator; degrees offered online or in the classroom
- Doctor of Nursing Practice with a concentration in translation science; accepting students who have at least a master's degree in nursing and offered online in collaboration with two other Purdue University campuses

Purdue University Northwest College of Nursing offers a traditional four-year program for students who have no previous college credit or for students who have previous college credit and wish to transfer into the College. In addition to the traditional program, the College offers an accelerated program for non-nurses who possess a minimum of a baccalaureate degree in another discipline to complete a baccalaureate degree in nursing in a shortened time frame. The undergraduate degree prepares a nurse generalist with baccalaureate level nursing competencies who will be able to provide comprehensive, safe, nursing care for people from birth to death within a variety of healthcare settings. It also academically prepares students to wish to pursue advanced degrees in nursing. Upon completion, the student will be eligible to take the NCLEX registered nurse examination.

Master's level graduates are prepared for advanced nursing practice (FNP or AG-CNS) and certification in their area of concentration or as nursing educators in clinical or community college arenas. These programs have a strong clinical emphasis and prepare nurses for to lead evidence based practice change in their settings.

The Doctor of Nursing Practice (DNP) is a post-master's degree offering that prepares nurses to lead transformative change in healthcare. This online degree is offered in collaboration with the Fort Wayne and West Lafayette campuses. At the PNW campus, students are prepared to lead transformative healthcare by becoming experts in the search, appraisal, synthesis, transfer, and application of evidence and in the evaluation of its impact on outcomes.

All programs have special admission requirements that are available through the specific program's website. The baccalaureate and master's degree programs are accredited by the Accreditation Commission for Education in Nursing.

## Accreditations

- State accreditation: Indiana Professional Licensing Agency (Attn: Indiana State Board of Nursing) 402 W Washington Street - Room W072, Indianapolis, IN 46204 phone: (317) 234-2043  
<http://www.in.gov/pla/nursing.htm>
- National accreditation of all baccalaureate and master's programs: Accreditation Commission for Education in Nursing 3343 Peachtree Road NE, Suite 850, Atlanta Georgia <http://www.acenursing.org>

## Minors

Minors offered at Purdue Northwest.

## Bachelor of Science in Nursing

## **Nursing, BSN, Concentration: Accelerated Bachelor's Second Degree**

### **Degree Requirements**

#### **Major Core (61 Credits)**

- NUR 18200 - Conceptual And Theoretical Thinking In Nursing
- NUR 18800 - Foundations Of Physical Assessment
- NUR 19201 - Foundations of Nursing
- NUR 19600 - Foundations Of Psychosocial Nursing
- NUR 28201 - Adult Health I
- NUR 28600 - Mental Health Nursing
- NUR 29400 - Essential Pharmacotherapeutics For Nursing
- NUR 31700 - Nursing Care Of Women Through The Lifespan
- NUR 31800 - Maternity Practicum
- NUR 35200 - Nursing Care Of Older Adults
- NUR 36100 - Pediatric Nursing
- NUR 37200 - Pediatric Nursing Practicum
- NUR 39000 - Nursing Research
- NUR 39100 - Professional Ethics
- NUR 39201 - Adult Health II
- NUR 41500 - Pathophysiology
- NUR 45200 - Quality And Safety In Professional Nursing Practice
- NUR 48601 - Community Health Nursing
- NUR 48701 - Transitions Into Professional Nursing Practice
- NUR 49301 - Adult Health III
- NUR 49800 - Capstone Course In Nursing

#### **Total 120 Credits Required**

Admission Pre-requisites for General Education Approved coursework: Human Anatomy & Physiology (6-8 credits); Microbiology (4 credits); Computer Information Technology (3 credits); Statistics (3 credits); Nutrition (3 credits); English Composition (6 credits); Behavioral Sciences (6 credits); Humanities (3 credits).

Distribution of credits: Pre-Requisite requirements (34 to 36 credits); Nursing core (63 credits); Previous Degree (20 to 23 credits).

## **Nursing, BSN, Concentration: Professional Nursing**

### **Degree Requirements**

#### **PNW General Education Core (31 Credits Minimum)**

##### **English Composition (6 Credits)**

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

##### **Speech Communication (3 Credits)**

- COM 11400 - Fundamentals Of Speech Communication

##### **Quantitative Reasoning (3 Credits)**

- SOC 38200 - Introduction To Statistics In Sociology
- STAT 30100 - Elementary Statistical Methods
- STAT 31000 - Health Care Statistics

##### **Natural Sciences (3 Credits)**

- CHM 11900 - General Chemistry

### Technology (3 Credits)

- NUR 45100 - Nursing Informatics

### Humanities (3 Credits)

Select from the Humanities Core list

### Social Sciences (3 Credits)

- PSY 12000 - Elementary Psychology

### Additional Credits (6 Credits)

- Select from the Philosophy/Humanities Core list
- FN 30300 - Essentials Of Nutrition

### First-Year Experience (FYE) (1 Credit)

- NUR 18100 - Introduction To Professional Nursing

### Major Core (77 Credits)

- NUR 18200 - Conceptual And Theoretical Thinking In Nursing
- NUR 19600 - Foundations Of Psychosocial Nursing
- NUR 27500 - Alternative Therapies For Nursing Practice
- NUR 41500 - Pathophysiology
- NUR 18800 - Foundations Of Physical Assessment
- NUR 27400 - Essential Pharmacokinetics For Nursing
- NUR 29400 - Essential Pharmacotherapeutics For Nursing
- NUR 39400 - Health Promotion And Education
- NUR 19201 - Foundations of Nursing
- NUR 39000 - Nursing Research
- NUR 39100 - Professional Ethics
- NUR 28201 - Adult Health I
- NUR 28600 - Mental Health Nursing
- NUR 28700 - Mental Health Practicum
- NUR 39201 - Adult Health II
- NUR 31700 - Nursing Care Of Women Through The Lifespan
- NUR 31800 - Maternity Practicum
- NUR 39700 - Nursing Care Of The Aged, Disabled and Chronically Ill
- NUR 48601 - Community Health Nursing
- NUR 48200 - Nursing Leadership And Management
- NUR 36100 - Pediatric Nursing
- NUR 37200 - Pediatric Nursing Practicum
- NUR 45200 - Quality And Safety In Professional Nursing Practice
- NUR 48701 - Transitions Into Professional Nursing Practice
- NUR 49301 - Adult Health III
- NUR 49800 - Capstone Course In Nursing

### Other Required Courses (12 Credits)

- BIOL 21300 - Human Anatomy And Physiology I
- BIOL 21400 - Human Anatomy And Physiology II
- BIOL 22100 - Introduction To Microbiology

### Total 120 Credits Required

## Nursing, BSN, Concentration: RN to BSN Online

## Degree Requirements

### Major Core (34 Credits)

- NUR 18200 - Conceptual And Theoretical Thinking In Nursing
- NUR 38800 - Nursing Of Families And Groups
- NUR 39000 - Nursing Research
- NUR 39100 - Professional Ethics
- NUR 39400 - Health Promotion And Education
- NUR 39700 - Nursing Care Of The Aged, Disabled and Chronically Ill
- NUR 41500 - Pathophysiology
- NUR 45100 - Nursing Informatics
- NUR 45200 - Quality And Safety In Professional Nursing Practice
- NUR 48200 - Nursing Leadership And Management
- NUR 48300 - Community And Public Health Nursing
- NUR 49800 - Capstone Course In Nursing

### Prerequisite Credits (62 Credits)

Admission Pre-requisites: Human Anatomy & Physiology (8 credits); Microbiology (4 credits); General Chemistry (3 credits); Pharmacology, Math or Science (2 credits); English Composition (3 credits); Humanities or Social Science (6 credits); Elementary Psychology (3 credits); Free Elective (3 credits); Nursing (30 credits).

### Non-Nursing Required Courses (24 Credits)

Statistics (3 credits); English Composition II (3 credits); Communication (3 credits); Humanities or Social Science (6 credits); Electives (9 credits).

## Master of Science

### Nursing, MS

Students select between the Adult-Gerontology Clinical Nurse Specialist (47 credits) and Family Nurse Practitioner (47 credits) options. Full-time study requires six semesters including summer; part-time study options are available.

### Admission Requirements

1. Graduation from an accredited baccalaureate program in nursing.
2. Evidence of current United States registered nurse licensure.
3. Minimum undergraduate cumulative GPA of 3.0/4.0
4. Basic physical assessment course.
5. Introductory statistics course (within five years prior to admission).
6. Criminal background check clearance (Information about testing to be obtained through College of Nursing.)

An applicant who does not meet one or more of the admission requirements may be considered for conditional admission status. In addition to the preceding requirements for admission, the College of Nursing adheres to Purdue University Graduate School Admission policies regarding English as a foreign language.

### Special Graduation Requirements

Final graduation grade point average of a "B" or better on the approved Plan of Study. Minimum grade of "B" in all core and specialty required nursing courses. The program must be completed within 6 years following admission.

### Advanced Practice in Nursing Core Courses

(Applies to all Masters-level study options)

- NUR 52500 - Informatics In Nursing
- NUR 53100 - Theoretical And Ethical Reasoning In Advanced Practice Nursing
- NUR 50100 - Foundations Of Advanced Practice In Nursing
- NUR 50500 - Sociocultural Influences On Health
- NUR 51000 - Research And Evidence Based Nursing Practice
- NUR 51100 - Health Promotion For Advanced Practice In Nursing
- NUR 65600 - Healthcare Organization, Policy and Economics

## Additional Clinical Nurse Specialist and Family Nurse Practitioner Core Courses

- NUR 50200 - Pharmacotherapeutics for Advanced Practice Nursing
- NUR 50300 - Advanced Health Assessment
- NUR 57400 - Pathophysiologic Concepts For Advanced Practice Nursing I
- NUR 57500 - Pathophysiologic Concepts For Advanced Practice Nursing II

## Specialty Courses - Adult-Gerontology Clinical Nurse Specialist Option

- NUR 60000 - Adult-Gerontology Clinical Nurse Specialist I
- NUR 60100 - Adult-Gerontology Clinical Nurse Specialist Practicum I
- NUR 61800 - Adult-Gerontology Clinical Nurse Specialist II
- NUR 62000 - Adult-Gerontology Clinical Nurse Specialist Practicum II
- NUR 65800 - Adult-Gerontology Clinical Nurse Specialist Practicum III: Clinical Synthesis

## Specialty Courses - Family Nurse Practitioner Option

- NUR 61100 - Primary Care Of The Young Family
- NUR 61300 - Primary Care Of The Young Family Practicum
- NUR 62200 - Primary Care Of The Aging Family
- NUR 62300 - Primary Care Of The Aging Family Practicum
- NUR 65700 - FNP Practicum: Clinical Synthesis

## Total 47 Credits Required

## Nursing, MS, Concentration: Nurse Executive

Full-time study requires six semesters including summer; part-time study options are available.

## Admission Requirements

1. Graduation from an accredited baccalaureate program in nursing.
2. Evidence of current United States registered nurse licensure nurse licensure.
3. Minimum undergraduate cumulative GPA of 3.0/4.0
4. Basic physical assessment course.
5. Introductory statistics course (within five years prior to admission).
6. Criminal background check clearance (Information about testing to be obtained through College of Nursing.)

An applicant who does not meet one or more of the admission requirements may be considered for conditional admission status. In addition to the preceding requirements for admission, the College of Nursing adheres to Purdue University Graduate School Admission policies regarding English as a foreign language.

## Special Graduation Requirements

Final graduation grade point average of a "B" or better on the approved Plan of Study. Minimum grade of "B" in all core and specialty required nursing courses. The program must be completed within 6 years following admission.

## Core Master's Courses

- NUR 50100 - Foundations Of Advanced Practice In Nursing
- NUR 50500 - Sociocultural Influences On Health
- NUR 51000 - Research And Evidence Based Nursing Practice
- NUR 52500 - Informatics In Nursing
- NUR 53100 - Theoretical And Ethical Reasoning In Advanced Practice Nursing
- NUR 65600 - Healthcare Organization, Policy and Economics

## Nurse Executive Concentration

- NUR 65000 - Concepts For The Nurse Executive Creating An Environment For Professional Practice
- NUR 65100 - Role Of The Nurse Executive In Creating An Environment For Professional Practice

- NUR 65200 - Role Of The Nurse Executive In Managing Nursing Practice
- NUR 65300 - Healthcare Financial Management
- OBHR 63300 - Human Resource Management
- NUR 67100 - Nurse Executive Practicum I
- NUR 67200 - Nurse Executive Practicum II

## **Total 36 Credits Required**

## **Nursing, MS, Concentration: Nursing Education**

Full-time study requires six semesters including summer; part-time study options are available.

### **Admission Requirements**

1. Graduation from an accredited baccalaureate program in nursing.
2. Evidence of current United States registered nurse licensure nurse licensure.
3. Minimum undergraduate cumulative GPA of 3.0/4.0
4. Basic physical assessment course.
5. Introductory statistics course (within five years prior to admission).
6. Criminal background check clearance (Information about testing to be obtained through College of Nursing.)

An applicant who does not meet one or more of the admission requirements may be considered for conditional admission status. In addition to the preceding requirements for admission, the College of Nursing adheres to Purdue University Graduate School Admission policies regarding English as a foreign language.

### **Special Graduation Requirements**

Final graduation grade point average of a "B" or better on the approved Plan of Study. Minimum grade of "B" in all core and specialty required nursing courses. The program must be completed within 6 years following admission.

### **Core Master's Courses**

- NUR 50100 - Foundations Of Advanced Practice In Nursing
- NUR 50500 - Sociocultural Influences On Health
- NUR 51000 - Research And Evidence Based Nursing Practice
- NUR 52500 - Informatics In Nursing
- NUR 53100 - Theoretical And Ethical Reasoning In Advanced Practice Nursing
- NUR 65600 - Healthcare Organization, Policy and Economics

### **Advanced Core**

- NUR 50200 - Pharmacotherapeutics for Advanced Practice Nursing
- NUR 50300 - Advanced Health Assessment
- NUR 59900 - Special Topics/Independent Study In Nursing

### **Education Area of Concentration**

- NUR 66000 - Curriculum Development In Nursing
- NUR 66100 - Theories And Principles Of Teaching And Learning In Nursing Education
- NUR 66200 - Teaching Strategies For Nursing
- NUR 66300 - Assessment And Measurement In Nursing Education

## **Total 38 Credits Required**

## **Doctor of Nursing Practice**

### **Nursing Practice, DNP**

The Doctor of Nursing Practice (DNP) program prepares nurses to lead transformative change in healthcare. Graduates acquire scientific, organizational, leadership and economic knowledge that allows them to plan, manage and deliver cost-effective, evidence based care.

We offer the DNP degree in collaboration with two other campuses in the Purdue University system: West Lafayette and Fort Wayne. Each campus in the collaborative DNP program has a specific area of concentration. The DNP concentration offered at Purdue University Northwest is Translation Science.

Preparation in the science of translation will enable DNP program graduates to become experts in searching for, appraising, synthesizing, transferring, and applying evidence. Graduates will also become experts in evaluating the impact of evidence on outcomes.

## Admission Requirements

Graduation from an accredited program with a master's degree in nursing.

Grades in all previous Master's coursework of "B" or better.\*

Current U.S. RN (registered nurse) license in the state in which practice will occur.

Evidence of successful completion of an introductory statistics course within the last 5 years.\*

Personal interview (will be scheduled following submission of application and all related documents).

\*Note: Applicants not meeting this criterion may be considered for conditional admission status.

## Special Graduation Requirements

Final graduation grade point average of a "B" or better on the approved Plan of Study. Minimum grade of "B" in all core and specialty required nursing courses.

## Required Courses

### Advanced Practice Nursing/MS Core Courses

Note: The following courses may be waived if student has successfully completed a comparable graduate course prior to application to this program from an institution that has been accredited by CCNE or ACEN.

- NUR 50200 - Pharmacotherapeutics for Advanced Practice Nursing
- NUR 50300 - Advanced Health Assessment
- NUR 50700 - Physiologic Concepts For Advanced Practice Nursing

### DNP Leadership Courses

- NUR 52500 - Informatics In Nursing \*
  
- NUR 63200 - Health Policy Local to Global  
or
- NUR 65600 - Healthcare Organization, Policy and Economics \*
  
- NUR 62500 - History, Ethics, and Innovations in Healthcare Delivery Systems
- NUR 67800 - Healthcare Economics and Finance

### Note

\* If course taken as part of MS degree, will be replaced by elective

### DNP Evidence Based Practice Courses

- NUR 59900 - Special Topics/Independent Study In Nursing
- NUR 62400 - Evidence Based Practice
- NUR 62600 - Applied Biostatistics for Outcome Evaluation
- NUR 64200 - Systems Approaches in Healthcare Engineering
- NUR 67300 - Health Policy Residency

### DNP Cognate/Inquiry Courses

- NUR 67600 - Knowledge Translation For Transforming Healthcare
- NUR 59900 - DNP Cognate Residency I
- NUR 59900 - Clinical Independent study  
(Up to 5 credits may be required if MS program contained fewer than 500 practicum hours)
- NUR 68700 - DNP Practice Inquiry I
- NUR 68900 - DNP Practice Inquiry II

## Total 38 Credits Required

The DNP program is a 38 credit hours post-Master's degree. Additional hours may be required depending on the master's degree curriculum.

## **Graduate Certificate**

### **Nurse Executive Graduate Certificate**

#### **Course Requirements**

- NUR 66000 - Curriculum Development In Nursing
- NUR 66100 - Theories And Principles Of Teaching And Learning In Nursing Education
- NUR 66200 - Teaching Strategies For Nursing
- NUR 66300 - Assessment And Measurement In Nursing Education

#### **Total 12 Credits Required**

### **Post-Master's Certificate**

### **Adult-Gerontology Clinical Nurse Specialist Post-Master's Certificate**

The purpose of the Adult-Gerontology Clinical Nurse Specialist Certificate Programs at Purdue University Northwest will be to provide Clinical Nurse Specialist (CNS) preparation to qualified Master's prepared nurses. CNSs are advanced practice nurses who are uniquely prepared to meet complex patients' needs for expert nursing care. In addition, CNSs advance the practice of nursing through their positive influence on nurses, nursing practice and healthcare systems. The target audience for this program includes master's prepared nurses that are interested in becoming clinical nurse specialists.

#### **Admission Requirements**

The admission process for the Adult Health or Critical Care Clinical Nurse Specialist Post-Master's Certificate Programs adheres to Graduate School Admission policies regarding English as a foreign language and parallels that for students seeking a Master's Degree in Nursing. Specific requirements are:

1. Master's degree in nursing from an accredited institution or admission and enrollment in a master's degree program in nursing.
2. Minimum graduate GPA of 3.0/4.0 with the possibility of conditional admission for applicants who do not meet this requirement.
3. Evidence of current United States nurse licensure.
4. A minimum of one year or 1500 hours of experience as a registered nurse.
5. Criminal background check clearance (Information about testing to be obtained through College of Nursing).

#### **Completion Requirements**

The certificate requires students to complete a minimum of 12 credit hours and a maximum of 30 credit hours consisting of the following courses.

#### **Adult-Gerontology Clinical Nurse Specialist**

- NUR 50200 - Pharmacotherapeutics for Advanced Practice Nursing \*
- NUR 50300 - Advanced Health Assessment \*
- NUR 57400 - Pathophysiologic Concepts For Advanced Practice Nursing I \*
- NUR 57500 - Pathophysiologic Concepts For Advanced Practice Nursing II \*
- NUR 51100 - Health Promotion For Advanced Practice In Nursing \*
- NUR 60000 - Adult-Gerontology Clinical Nurse Specialist I
- NUR 60100 - Adult-Gerontology Clinical Nurse Specialist Practicum I
- NUR 61800 - Adult-Gerontology Clinical Nurse Specialist II
- NUR 62000 - Adult-Gerontology Clinical Nurse Specialist Practicum II
- NUR 65800 - Adult-Gerontology Clinical Nurse Specialist Practicum III: Clinical Synthesis

#### **Note**

\*May be waived if student has taken a comparable course at Purdue University Northwest or another accredited nursing program within 5 years prior to application to this program



## Total 12-30 Credits Required

### Family Nurse Practitioner Post-Master's Certificate

The purpose of the Family Nurse Practitioner Certificate Program at Purdue University Northwest is to increase the numbers of family nurse practitioners prepared to provide primary care. Primary care is currently undergoing a period of expansion in order to meet the increasing healthcare needs of our nation's citizens. The post-master's certificate program at Purdue University Northwest exists to address the need for increased numbers of primary care providers. The target audience for this program includes master's prepared nurses that are interested in becoming family nurse practitioners.

### Admission Requirements

The admission process for the Family Nurse Practitioner Certificate Program adheres to Graduate School Admission policies regarding English as a foreign language and parallels that for students seeking a Master's Degree in Nursing. Specific requirements are:

1. Master's degree in nursing from an accredited institution or admission and enrollment in a master's degree program in nursing.
2. Minimum graduate GPA of 3.0/4.0 with the possibility of conditional admission for applicants who do not meet this requirement.
3. Evidence of current registered nurse licensure.
4. A minimum of one year or 1500 hours of experience as a registered nurse.
5. Criminal background check clearance (Information about testing to be obtained through College of Nursing.)

### Completion Requirements

Credit Hour Requirements: The certificate requires students to complete a minimum of 12 and a maximum of 30 credit hours consisting of the following courses:

- NUR 50200 - Pharmacotherapeutics for Advanced Practice Nursing \*
- NUR 50300 - Advanced Health Assessment \*
- NUR 57400 - Pathophysiologic Concepts For Advanced Practice Nursing I \*
- NUR 57500 - Pathophysiologic Concepts For Advanced Practice Nursing II \*
- NUR 51100 - Health Promotion For Advanced Practice In Nursing \*
- NUR 61100 - Primary Care Of The Young Family
- NUR 61300 - Primary Care Of The Young Family Practicum
- NUR 62200 - Primary Care Of The Aging Family
- NUR 62300 - Primary Care Of The Aging Family Practicum
- NUR 65700 - FNP Practicum: Clinical Synthesis

### Note

\*May be waived if student has taken a comparable course at Purdue University Northwest or another accredited nursing program within 5 years prior to application to this program.

## Total 12-30 Credits Required

### Nursing Education Post-Master's Certificate

The purpose of the Post-Master's Certificate in Nursing Education Program at Purdue University Calumet is to increase the numbers of nurse educators and improve the quality of nursing education. This purpose is accomplished by: providing knowledge and experience in curriculum development; teaching methods to enable qualified master's prepared nurses to assume the role of beginning faculty; and providing faculty who wish to acquire formal academic preparation in teaching the means to do so. The target audience for this program consists of master's students and master's prepared advanced practice nurses, as well as faculty interested in continuing their formal education in teaching.

### Admission Requirements

The admission process for the Post-Master's Certificate in Nursing Education adheres to Graduate School Admission policies regarding English as a foreign language and parallels that for students seeking a Master's Degree in Nursing. Specific requirements are:

1. Master's degree in nursing from an accredited institution or admission and enrollment in a master's degree program in nursing.
2. Minimum graduate GPA of 3.0/4.0 with the possibility of conditional admission for applicants who do not meet this requirement.
3. Evidence of current registered nurse licensure.
4. Criminal background check clearance (Information about testing to be obtained through College of Nursing.)

## Completion Requirements

The certificate requires students to complete 10 credit hours consisting of the following existing courses:

- EDCI 57200 - Introduction To Learning Systems Design
- NUR 66000 - Curriculum Development In Nursing
- NUR 66200 - Teaching Strategies For Nursing

**Total 10 Credits Required**

# College of Technology

## College of Technology

*Niaz Latif, Ph.D., Dean*

[www.pnw.edu/technology](http://www.pnw.edu/technology)

The College of Technology offers innovative programs that have a direct impact, both locally and nationally, through education, technology development, and research. Purdue University Northwest has repeatedly earned the recognition as "best university to obtain a technology degree" in Northwest Indiana. Our graduates are working for major national and international companies.

Purdue Northwest's College of Technology partners with business, industry and government to give students opportunities to solve real-world problems, leading to internships and jobs. The majority of our courses are application-oriented and include laboratories with state-of-the-art equipment. Dedicated technology labs provide application-oriented learning experiences making graduates career-ready and attractive to prospective employers.

We strive for program excellence and we continuously improve our programs so that they are relevant and connected to industry and business. All of the undergraduate programs in the College of Technology are nationally accredited. This ensures that each program is independently reviewed and meets the quality expectation for that profession. Our graduates are well prepared for jobs in their chosen field.

Please visit our individual degree programs to learn more about the courses you will take and discover the opportunities awaiting you in your program of interest. Please contact us if you have questions. Alternatively, just schedule a visit.

We look forward to meeting you.

## Accreditations

- Association of Technology, Management, and Applied Engineering, <http://www.atmae.org>.
- Computing Accreditation Commission of ABET, <http://www.abet.org>.
- Engineering Technology Accreditation Commission of ABET, <http://www.abet.org>.
- Applied Science Accreditation Commission of ABET, <http://www.abet.org>.

## Minors

Minors offered at Purdue Northwest.

## Master of Science

### Modeling, Simulation and Visualization, MS

A 30-credit hour interdisciplinary Master of Science degree program, the MSV Master of Science degree prepares students in a variety of fields to use modeling, simulation and visualization tools and skills. Students with undergraduate education in science, technology, computer science, engineering, medical/healthcare, and management may be interested in the degree. MSV skills may be used by designers, engineers, technologists, business intelligence developers, software consultants and other professionals in many additional fields, including transportation, healthcare and management.

## Program Requirements

The program consists of 30 credit hours, with 18 hours of core courses, 9 hours of electives, and one capstone project (3 credits).

### Core Courses (18 Credits)

- MGMT 55100 - Unified Modeling Language
- MSV 56500 - High Performance Computing
- MSV 56700 - Simulation Techniques
- MSV 57500 - Software Project Management
- MSV 57600 - Design And Analysis Of Simulation Experiments
- MSV 57700 - Visualization Techniques

### Elective Courses (9 Credits)

A number of graduate level courses are available for use as electives; electives are approved by the student's graduate committee for inclusion in the plan of study.

### Capstone Course (3 Credits)

- TECH 59800 - Directed MS Project (taken in two phases, across two semesters)

### Total 30 Credits Required

## Technology, MS

The Master of Science in Technology degree offered by Purdue University Northwest, Hammond, Indiana, prepares students to become leaders in technology disciplines. The program allows students pursue an advanced degree in a focus technology discipline, with the flexibility to pursue interdisciplinary interests and develop leadership skills based on ethics and an understanding of global issues affecting technology. Graduates of the Purdue University Northwest, Hammond, Indiana. Master of Science in Technology degree will not only understand leading-edge concepts, but also be able to strategically apply them. Designed to allow students to achieve their career objectives, the program is a flexible, directed project (33-hours) or coursework based (30-hours) plan of study in which students can choose their concentration in one of many of the College of Technology disciplines, or an approved interdisciplinary area.

Currently, students could choose any of the following concentrations:

- Computer Information Technology
- Electrical Engineering Technology
- Industrial Engineering Technology
- Mechanical Engineering Technology
- Mechatronics Engineering Technology
- Technology Leadership & Management

Purdue University Northwest's approach of merging technology with other areas of study and allowing students to customize their course of study means that students in the program can study interdisciplinary and specialized aspects of their fields. This broad-based, flexible degree produces graduates who can enter the marketplace with a distinct and sought-after advantage.

## Program Requirements

### Three Core Courses (9 Credits)

- IT 50700 - Measurement And Evaluation In Industry And Technology
- IT 50800 - Quality And Productivity In Industry And Technology
- TECH 64600 - Analysis Of Research In Industry And Technology

### Four Concentration Courses (12 Credit)

12 credit hours in the area of concentration

### Three Courses in Technical Electives (9 Credits)

A directed project for students choosing this option – The project focuses on an applied research issue in the student's area of interest. The 3-credit hour directed MS project will be taken in two phases, across two semesters.

## Admission Requirements for Degree-seeking Students

Admission will be based on the following criteria and documentation:

- B.S. from an accredited technology program or related fields.
- Undergraduate GPA of 3.0 or greater based on a 4.0 scale.
- Official transcripts from every institution of higher learning attended uploaded to application
- Appropriate experience as documented in a resume.
- A goal statement or statement of purpose commensurate with the program and faculty strengths.
- Three letters of recommendation from academic or professional references (Recommendations from friends or family members are not given weight).
- GRE is not required for the MS Technology degree, but may be considered for those applicants who do not meet the minimum GPA for unconditional admission.

- Students who do not meet the requirements for unconditional admission may be considered for conditional admission.
- International degree-seeking applicants whose native language is not English are required to submit Test of English as a Foreign Language (TOEFL), or International English Language Testing System (IELTS) scores or Purdue Northwest's English Language Program (ELP). ELP is an academic, intensive English program that aims primarily at assisting international students in developing their English language proficiency to the level needed to pursue their education at Purdue University Northwest.

## Technology Leadership and Management (online)

The Online MS Degree in Technology – Leadership and Management concentration is expected to prepare students to manage and lead in technology professions. It will allow students who currently have a technology area undergraduate degree, or work in a technical field, to acquire skills to prepare them for managerial or leadership roles in their area. Emphasis is placed on preparing students for technical leadership positions in business and industry, faculty positions in technology and engineering technology at community college and university levels, or to continue for a Ph.D. in technology or a closely related field.

### Plan of Study

All required coursework for this major will be offered via distance education technology over an eighteen month to two-year period. Students who drop out of sequence will be able to take the course with the next cohort group, but will lengthen the time to complete the degree.

### Curriculum Plan (12 Hours)

(3 cr. hrs. each) currently required courses for the MS Degree in Technology

- IT 50700 - Measurement And Evaluation In Industry And Technology
- IT 50800 - Quality And Productivity In Industry And Technology
- TECH 64600 - Analysis Of Research In Industry And Technology

### Additional Courses Required for the Requested Concentration (21 Hours)

- IT 57100 - Project Management In Industry And Technology
- IT 53500 - Global Supply Chain Management
- OLS 58900 - Leadership And Ethics
- IET 51000 - Product And Process Development Optimization
- MET 52700 - Technology From A Global Perspective
- OLS 58000 - Interpersonal Skills For Leaders
- OLS 58800 - Strategic Planning And Marketing For Technology

### Total

30 credit hours for MS degree in Technology with concentration in Technology Leadership & Management

### Total 30-33 Credits Required

## Graduate Certificate

### Database Integration Technology Graduate Certificate

#### Certificate Requirements

Any Four (4) of the following Five (5) Courses

- ITS 56000 - Database Management Security
- ITS 56200 - Database Administration
- ITS 56400 - Datawarehousing And Business Intelligence
- ITS 56600 - Database Object-Oriented Modeling And Architecture
- ITS 56800 - Database Application Integration

### Total 12 Credits Required

## **Organizational Leadership and Supervision Graduate Certificate**

### **Certificate Requirements**

Four (4) Courses

- OLS 58900 - Leadership And Ethics
- OLS 58000 - Interpersonal Skills For Leaders
- OLS 58800 - Strategic Planning And Marketing For Technology

Plus any one of the following:

- OLS 48600 - Management Of Change
- OLS 48500 - Leadership For Team Development
- OLS 45400 - Gender And Diversity In Management
- or additional OLS graduate courses (50000 level)

**Total 12 Credits Required**

## **Six Sigma for Business and Industry Graduate Certificate**

### **Certificate Requirements**

- IET 41100 - Applications Of Lean And Six Sigma Methodologies  
Prerequisite: basic statistics and basic understanding of quality principles
- IT 50800 - Quality And Productivity In Industry And Technology
- IET 51000 - Product And Process Development Optimization  
Prerequisite: basic statistics
- IET 52000 - Enterprise Quality Planning And Analysis  
Prerequisite: basic statistics and IT 50800

**Admission Requirements for Certificate-seeking Students**

- B.S. from an accredited technology program or related fields.

**Total 12 Credits Required**

## **Department of Computer Information Technology and Graphics**

### **Bachelor of Science**

### **Computer Graphics Technology, BS**

The Computer Graphics Technology Bachelor of Science program is designed to prepare students for employment as graphics technologists. Students work in computer labs developing their graphics skills, techniques, concepts, and management ability through individual and team-based projects. The courses in the curriculum develop skills and knowledge critical to all areas of the computer graphics technology specialization. They embrace the teaching of the following core behaviors:

Visualizing, Sketching, Geometric Modeling, Problem Solving, Animating, Applying Technology, Graphic Designing, Computer Programming, Illustrating, User Interface and User Experience Designing, Mobile and Web Application Developing, and Appreciating Profession.

Many of our graduates pursue careers as web designers, user interface designers, animation and game developers, graphics technicians, mobile application designers, and web developers once they have finished their degrees.

The Computer Graphics Technology Bachelor of Science program is accredited by the Association of Technology, Management, and Applied Engineering, <http://www.atmae.org>. This ensures that the program is independently reviewed and meets the quality expectation for that profession.

### **Degree Requirements**

## **PNW General Education Core (30 Credits Minimum)**

### **English Composition (6 Credits)**

- ENGL 10400 - English Composition I
- ENGL 22000 - Technical Report Writing

### **Speech Communication (3 Credits)**

- COM 11400 - Fundamentals Of Speech Communication

### **Quantitative Reasoning (6 Credits)**

- MA 14700 - Algebra And Trigonometry For Technology  
or
- MA 15300 - College Algebra
- MA 14800 - Algebra And Trigonometry For Technology II  
or
- MA 15400 - Trigonometry

### **Natural Sciences (3 Credits)**

Select from the Natural Sciences Core list

### **Technology (3 Credits)**

- CGT 14100 - Internet Foundations Technologies And Development

### **Humanities (3 Credits)**

Select from the Humanities Core list

### **Social Sciences (3 Credits)**

Select from the Social Sciences Core list

### **First-Year Experience (FYE) (3 Credits)**

- CGT 10100 - Introduction to Computer Graphics Technology

### **Major Core (75 Credits)**

- CGT 11100 - Designing For Visualization And Communication
- CGT 11600 - Geometric Modeling For Visualization And Communication
- CGT 11200 - Sketching For Visualization And Communication
- CGT 21500 - Computer Graphics Programming I
- CGT 21100 - Raster Imaging For Computer Graphics
- ECON 10100 - Survey Of Economics
- PHYS 22000 - General Physics
- CGT 21600 - Vector Imaging For Computer Graphics
- CGT 24100 - Introduction to Computer Animation
- CGT 25600 - Principles Of User Experience Design
- OLS 25200 - Human Relations In Organizations
- CGT 33000 - Multimedia, Animation And Video Game Design And Development
- CGT 34000 - Digital Lighting And Rendering for Computer Animation
- CGT 35100 - Interactive Multimedia Design
- CGT 35300 - Principles Of Interactive And Dynamic Media
- OLS 35000 - Creativity In Business And Industry
- CGT 30700 - Advanced Graphic Design for Web and Multimedia
- CGT 34100 - Motion for Computer Animation
- CGT 34600 - Digital Video And Audio
- CGT 45100 - Multimedia Application Development
- CGT 35600 - Web Programming, Development And Data Integration

- CGT 41501 - Contemporary Problems In Applied Computer Graphics
- CGT 44200 - Production for Computer Animation
- CGT 41600 - Senior Design Project
- CGT 44600 - Post-Production And Special Effects For Computer Animation  
or
- CGT 45600 - Advanced Web Programming, Development And Data Integration

### Other Required Courses (15 Credits)

#### Programming Course or Technology Elective (3 Credits)

Any course that emphasizes C++ or Java

#### OLS Electives (6 Credits)

Choose (2) OLS electives.

#### Technical Elective (3 Credits)

Any course in CGT, Technology, or AD (requires approval by CGT advisor)

#### Internship or CGT Elective (3 Credits)

**Choose One:**

- CGT 30800 - Prepress Production And Design
- CGT 30900 - Internship In Computer Graphics Technology
- CGT 31000 - Drawing, Acting And Scripts For Animation
- Any CGT graduate course
- 30000 to 40000 level AD course in Sketching or Photography
- Advanced course in visual programming, modeling, and/or simulation may be taken as a CGT elective

### Total 120 Credits Required

## Computer Information Technology, BS

The Computer Information Technology Bachelor of Science Program is based on curriculum standards of the Association for Computing Machinery/Institute of Electrical and Electronics Engineers - Computer Society (ACM/IEEE-CS) Information Technology Curriculum Guidelines, and meets the requirements of Purdue University Northwest's instructional guidelines.

The curriculum core is made up of general education courses and specific Information Technology requirements of the Guidelines. The core courses span knowledge areas that include computational thinking/problem solving, application development, database design and implementation, project management, human computer interaction, information assurance and security, networking technologies, platform technologies, and operating systems.

Many of our graduates pursue careers as software developers, web developers, mobile app developers, database analysts and developers, computer/cyber security specialists, network and system administrators, information technology architects, and project managers once they have finished their degrees.

The Computer Information Technology Bachelor of Science program is accredited by the Computing Accreditation Commission (CAC) of the Accreditation Board for Engineering and Technology (ABET), <http://www.abet.org>. This ensures that the program is independently reviewed and meets the quality expectation for that profession. The program is hosted in a National Center of Academic Excellence in Cyber Defense Education designed by the U.S. Department of Homeland Security and National Security Agency with a special focus on Network Security Administration. The designation symbolizes that the program curriculum meets the national standard of cyber defense education.

### Degree Requirements

#### PNW General Education Core (30 Credits Minimum)

##### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II

##### Speech Communication (3 Credits)



- COM 11400 - Fundamentals Of Speech Communication

### Quantitative Reasoning (6 Credits)

- MA 14700 - Algebra And Trigonometry For Technology  
or
- MA 15300 - College Algebra
- MA 20500 - Discrete Mathematics For Computer Technology

### Natural Sciences (3 Credits)

Select from the Natural Sciences Core list

### Technology (3 Credits)

- ITS 11000 - Web Systems Technology

### Humanities (3 Credits)

Select from the Humanities Core list

### Social Sciences (3 Credits)

Select from the Social Sciences Core list

### First-Year Experience (FYE) (3 Credits)

- ITS 10000 - Information Technology Fundamentals

### Major Core (75 Credits)

- ITS 13500 - Operating Systems Technologies
- ITS 14000 - Introduction To Computer Algorithms And Logic
- ITS 17000 - Networking Technologies
- ITS 24000 - Programming Fundamentals
- ITS 24500 - Integrative Programming
- ITS 26000 - Applied Database Technologies
- ITS 27000 - Internetworking Technologies
- STAT 30100 - Elementary Statistical Methods
- ITS 25000 - Fundamentals Of Information Assurance
- ITS 33000 - Advanced Operating Systems
- ITS 34000 - Advanced Programming
- ITS 35000 - Systems Assurance
- ITS 35200 - Disaster Recovery And Planning
- ITS 36000 - Distributed Application Architecture And Design
- ENGL 22000 - Technical Report Writing
- ITS 36200 - Distributed Application Development
- ITS 36400 - Database Modeling And Implementation
- ITS 37200 - System Administration And Management
- ITS 45000 - Software Assurance
- ITS 45200 - Computer Forensics
- ITS 46200 - Application Integration
- ITS 44000 - Mobile Application Development
- ITS 45400 - Assured Systems Design And Implementation
- ITS 47200 - Network Design And Implementation
- ITS 49000 - Senior Project Undergraduate Research

### Other Required Courses (15 Credits)

### Restricted Electives (15 Credits)

Choose five (5) courses from the list below:

- COM 41500 - Discussion Of Technical Problems  
or
- PHIL 32400 - Ethics For The Professions  
or
- OBHR 33000 - Introduction To Organizational Behavior
  
- ECET 10900 - Digital Fundamentals
- ECON 21000 - Principles Of Economics
- IET 10400 - Industrial Organization
  
- IET 35200 - Operations Management  
or
- BUSM 36000 - Production And Operations Management (has a prerequisite of BUSM 22500)
  
- IET 45100 - Monetary Analysis For Industrial Decisions  
or
- BUSM 22500 - Fundamental Managerial Statistics
  
- MA 22300 - Introductory Analysis I  
or
- MA 15910 - Introduction To Calculus  
or
- MA 16019 - Applied Calculus I For Technology  
or
- any higher level MA course
  
- ACC 20000 - Introductory Accounting  
or
- MGMT 20000 - Introductory Accounting
  
- OLS 25200 - Human Relations In Organizations  
or
- OBHR 33000 - Introduction To Organizational Behavior
  
- OLS 37600 - Human Resource Issues  
or
- OBHR 44500 - Team Dynamics (OBHR 33000 is a prerequisite)
  
- ITS 30000 level or higher not already required in the plan of study
- ITS 40000 level or higher not already required in the plan of study
- An approved minor may be substituted for restricted electives

## Total 120 Credits Required

### Minor

## Computer and Information Technology Minor

### Course Requirements (15 Credit Hours)

This minor has, as its base, core computer and information technology concepts that all students pursuing the minor are required to take. Then, depending upon their area of interest, students select one of the three Focus Courses to complete the minor. If their interests are with Internet and database concepts, they would choose either the Internet or

Database course. If they would like to explore concepts in data communication, they would select the Systems Software and Networking course.

### **Required Courses (12 Credits)**

- CNIT 14100 - Internet Foundations, Technologies, and Development
- CNIT 15500 - Introduction to Object-Oriented Programming
- CNIT 17600 - Information Technology Architectures
- CNIT 18000 - Introduction To Systems Development

### **Elective Course (3 Credits)**

**Choose One:**

- CNIT 25500 - Programming For The Internet
- CNIT 27200 - Database Fundamentals
- CNIT 27600 - Systems Software And Networking

## **Department of Construction Science and Organizational Leadership**

### **Bachelor of Science**

### **Construction Engineering and Management Technology, BS**

This major industry includes a variety of large general construction firms, small specialized contractors, materials suppliers, equipment manufacturers, and the design services of architects and engineers.

Each year architectural, construction, consulting engineering, industrial, laboratory testing, materials supplier, and surveying firms contact Purdue Northwest seeking baccalaureate degree graduates for work in the Chicagoland Region and in other parts of the country. This trend should continue since there are statistics that the present enrollment of technicians and technologists will not meet the needs of this country for many years.

Many of our graduates pursue careers as estimators, field superintendents, construction schedulers, expeditors, project managers, survey crew chiefs, materials technicians, architectural and civil draftspersons, and cost engineers once they have finished their degrees.

The Construction Engineering & Management Technology Bachelor of Science program is accredited by the Engineering Technology Accreditation Commission of ABET, <http://www.abet.org>. This ensures that the program is independently reviewed and meets the quality expectation for that profession.

### **Degree Requirements**

#### **PNW General Education Core (31 Credits Minimum)**

##### **English Composition (6 Credits)**

- ENGL 10400 - English Composition I
- ENGL 22000 - Technical Report Writing

##### **Speech Communication (3 Credits)**

- COM 11400 - Fundamentals Of Speech Communication

##### **Quantitative Reasoning (6 Credits)**

- MA 14700 - Algebra And Trigonometry For Technology
- MA 14800 - Algebra And Trigonometry For Technology II
- or
- MA 15300 - College Algebra
- MA 15400 - Trigonometry

##### **Natural Sciences (4 Credits)**

- PHYS 22000 - General Physics

##### **Technology (3 Credits)**

- CEMT 11700 - Construction Graphics

## Humanities (3 Credits)

Select from the Humanities Core list

## Social Sciences (3 Credits)

Select from the Social Sciences Core list

## First-Year Experience (FYE) (3 Credits)

- CEMT 10300 - Introduction To Construction Management

## Major Core (89 Credits)

- CEMT 17000 - Materials And Systems Of Construction
- CEMT 16001 - Statics
- CEMT 11200 - Survey Fundamentals Credit Hours: 3.00
- CEMT 26001 - Strength Of Materials
- CEMT 25300 - Hydraulics And Drainage
- CEMT 27600 - Construction Specifications And Contracts
- CEMT 23000 - Mechanical and Electrical Systems Credit Hours: 3.00
- CEMT 26600 - Materials Testing
- CEMT 28100 - Structural Calculations
- CEMT 20900 - Land Surveying and Subdivision
- CEMT 22200 - Architectural Construction
- CEMT 32500 - Structural Applications
- CEMT 33100 - Properties And Behavior Of Soils
- CEMT 34101 - Construction Operations
- CEMT 38000 - Concrete Construction Credit Hours: 3.00
- CEMT 34400 - Construction Inspection
- CEMT 34201 - Construction Costs And Bidding
- CEMT 45000 - Construction Scheduling
- CEMT 48900 - Senior Project Survey
- CEMT 30600 - Construction And Route Surveying
- CEMT 44500 - Construction Management I
- CEMT 49000 - Senior Project
- CEMT 49400 - Engineering Economics for Construction
- CEMT 30900 - Principles of Highway Construction
- CEMT 34000 - Fundamentals of Construction Safety Credit Hours: 3.00
- MA 16019 - Applied Calculus I For Technology
- STAT 30100 - Elementary Statistical Methods
- Lab Science Elective Credit Hours: 3.00
- COM Elective 30000 level or above
- ACC 20000 - Introductory Accounting  
or
- ECON 21000 - Principles Of Economics

## Total 120 Credits Required

## Organizational Leadership and Supervision, BS

With a major in Organizational Leadership and Supervision, you will focus on leadership and innovation to develop skills as a leader for national and global technology enterprises. The broad curricula will help you learn how to lead in a variety of scenarios, from innovative technology organizations to global teams and organizational change. You will

also take courses to understand how policies and law affect technology innovation and influence global technology and organizational leadership.

Many of our graduates pursue careers as corporate presidents and/or CEO's, project managers, production supervisors, project scheduler, human resource specialists, business administrators, and talent acquisition supervisors once they have finished their degrees.

The Organizational Leadership and Supervision Bachelor of Science program is accredited by the Applied Science Accreditation Commission of ABET, <http://www.abet.org>. This ensures that the program is independently reviewed and meets the quality expectation for that profession.

## Degree Requirements

### PNW General Education Core (30 Credits Minimum)

#### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 22000 - Technical Report Writing

#### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

#### Quantitative Reasoning (6 Credits)

- MA 14700 - Algebra And Trigonometry For Technology
- STAT 13000 - Statistics And Contemporary Life

#### Natural Sciences (3 Credits)

Select a Natural Sciences course with Lab

#### Technology (3 Credits)

- CIS 20400 - Introduction To Computer-Based Systems

#### Humanities (3 Credits)

- PHIL 32400 - Ethics For The Professions

#### Social Sciences (3 Credits)

Select from the Social Sciences Core list

#### First-Year Experience (FYE) (3 Credits)

- OLS 16300 - Fundamentals Of Self-Leadership

### Major Core (57 Credits)

- OLS 13100 - Introduction To Safety And Health Management
- OLS 25200 - Human Relations In Organizations
- OLS 27200 - Job Evaluation
- OLS 35000 - Creativity In Business And Industry
- OLS 37400 - Supervisory Management
- OLS 37500 - Training Methods
- OLS 37600 - Human Resource Issues
- OLS 37800 - Labor And Management Relations
- OLS 38400 - Leadership Process
- OLS 45400 - Gender And Diversity In Management
- OLS 46800 - Personnel Law
- OLS 47400 - Conference Leadership
- OLS 47700 - Conflict Management
- OLS 48300 - The Common Law Of The Workplace
- OLS 49300 - Senior Project - Phase I
- OLS 49700 - Senior Project
- ECON 21000 - Principles Of Economics

- ENGL 42000 - Business Writing
- PSY 12000 - Elementary Psychology
- SOC 38200 - Introduction To Statistics In Sociology

### **Other Required Courses (33 Credits)**

#### **Career Specialization Elective (15 Credits)**

A concentration of (5) job-related courses from the same subject area.

#### **Natural Science Elective with Lab (3 Credits)**

Any science course with a laboratory component (i.e. Biology, Physics, Chemistry, Geoscience, Earth Science).

#### **Communication Elective (3 Credits)**

Choose 1 course from:

- COM 31400 - Advanced Presentational Speaking
- COM 32200 - Leadership In Organization
- COM 32500 - Interviewing: Principles And Practice
- COM 43900 - Focus Group Research

#### **Free Electives (6 Credits)**

Choose any (2) 10000-level course or higher except MA 11500.

#### **OLS Elective (3 Credits)**

Any OLS course

#### **Technical Elective (3 Credits)**

Any course from a College of Technology program and approved by the OLS Program Academic Advisor.

### **Total 120 Credits Required**

## **Organizational Leadership and Supervision, BS,**

### **Concentration: Environmental Health and Safety**

The Organizational Leadership and Supervision Bachelor of Science Degree offers an area of concentration in Environmental Health and Safety (EHS). EHS is a profession that involves the prevention of incidents/accidents, illnesses, fires, explosions, and other events which harm people, property, and the environment.

EHS professionals are an important component of most industries, including: communication, consulting, construction, government, healthcare, insurance, manufacturing, transportation, petroleum, and utilities.

Many of our graduates pursue careers as safety coordinators, safety supervisors, safety instructors/trainers, loss control specialists, and EHS specialists once they have finished their degrees.

The Organizational Leadership and Supervision Bachelor of Science program is accredited by the Applied Science Accreditation Commission of ABET, <http://www.abet.org>. This ensures that the program is independently reviewed and meets the quality expectation for that profession.

### **Degree Requirements**

#### **PNW General Education Core (30 Credits Minimum)**

##### **English Composition (6 Credits)**

- ENGL 10400 - English Composition I
- ENGL 22000 - Technical Report Writing

##### **Speech Communication (3 Credits)**

- COM 11400 - Fundamentals Of Speech Communication

##### **Quantitative Reasoning (6 Credits)**

- MA 14700 - Algebra And Trigonometry For Technology
- MA 14800 - Algebra And Trigonometry For Technology II

##### **Natural Sciences (3 Credits)**

Select a Natural Sciences course with Lab

### Technology (3 Credits)

- CIS 20400 - Introduction To Computer-Based Systems

### Humanities (3 Credits)

- PHIL 32400 - Ethics For The Professions

### Social Sciences (3 Credits)

Select from the Social Sciences Core list

### First-Year Experience (FYE) (3 Credits)

- OLS 16300 - Fundamentals Of Self-Leadership

### Major Core (72 Credits)

- OLS 13100 - Introduction To Safety And Health Management
- OLS 24200 - Fundamentals Of Ergonomics
- OLS 25200 - Human Relations In Organizations
- OLS 30000 - Safety And Health For Engineering Technologies
- OLS 33200 - Fundamentals Of Industrial Hygiene
- OLS 33300 - Environmental Health And Safety Legislation And Standards
- OLS 33400 - Fire Protection
- OLS 33600 - Fundamentals Of Risk Assessment And Management
- OLS 33700 - Introduction To Emergency Management
- OLS 34000 - Fundamentals Of Construction Safety
- OLS 34100 - Fundamentals Of Environmental Health
- OLS 34300 - Hazardous Materials
- OLS 35500 - Incident Investigation
- OLS 37500 - Training Methods
- OLS 41500 - Introduction To Environmental Management
- OLS 42100 - Psychology And Sociology Of Safety
- OLS 43000 - Environmental Health And Safety Management
- OLS 45400 - Gender And Diversity In Management
- OLS 47400 - Conference Leadership
- OLS 49300 - Senior Project - Phase I
- OLS 49700 - Senior Project
- ECON 21000 - Principles Of Economics
- ENGL 42000 - Business Writing
- PSY 12000 - Elementary Psychology
- STAT 30100 - Elementary Statistical Methods

### Other Required Courses (18 Credits)

#### Chemistry Course (3 Credits)

- CHM 11100 or higher

#### Communication Elective (3 Credits)

Choose 1 course from:

- COM 31400 - Advanced Presentational Speaking
- COM 32200 - Leadership In Organization
- COM 32500 - Interviewing: Principles And Practice
- COM 43900 - Focus Group Research

#### OLS Electives (6 Credits)

Any (2) OLS courses

#### Free Elective (3 Credits)

Choose any 10000-level course or higher except MA 11500.

### **Technical Elective (3 Credits)**

Any course from a College of Technology program and approved by the OLS Program Academic Advisor.

## **Total 120 Credits Required**

### **Minor**

## **Organizational Leadership Minor**

The minor in Organizational Leadership gives students the opportunity to become familiar with the concepts related to leadership and management. Courses taken as part of this minor can also help increase the personal effectiveness of those students entering the workforce regardless of their chosen profession. Upon completion of the coursework leading up to the minor in organizational leadership, students should be able to:

- understand differences in individual and group behavior in the workplace
- develop personal strategies for becoming an effective manager
- function as a productive and effective member of a work group
- understand the fundamental process of change management
- understand, respect, appreciate and work effectively with a diversity of group members
- develop a strategy for moral and ethical decision making, personally as well as professionally

## **Course Requirements (15 Credit Hours)**

To help students meet the learning objectives, the minor requires students to complete the courses listed below. The minimum number of credit hours required for the minor is 15. All courses must be taken for a grade - there is no Pass/No Pass option. Students are expected to earn a minimum GPA of 2.5 in coursework leading up to the minor. Students are expected to take courses in sequence, based on prerequisites outlined in the PNW catalog.

### **Required Courses (12 Credits)**

- OLS 25200 - Human Relations In Organizations
- OLS 27400 - Applied Leadership
- OLS 38600 - Leadership For Organizational Change And Innovation
- OLS 38800 - Leadership Through Teams

### **Elective Course (3 Credits)**

**Choose One:**

- OLS 44100 - Leading Ethically
- OLS 45400 - Gender And Diversity In Management

## **Undergraduate Certificate**

### **Human Resources and Personnel Undergraduate Certificate**

*Minimum 2.0 GPA required in Certificate courses.*

### **Required Courses (15 Credits)**

- OLS 37600 - Human Resource Issues
- OLS 45400 - Gender And Diversity In Management
- OLS 46800 - Personnel Law

**Choose Two:**

- OLS 30300 - Substance Abuse In The Workplace
- OLS 37800 - Labor And Management Relations
- OLS 47400 - Conference Leadership
- OLS 47700 - Conflict Management
- OLS 48200 - Labor Arbitration

## **Leadership Undergraduate Certificate**



*Minimum 2.0 GPA required in Certificate courses.*

## **Required Courses (15 Credits)**

- OLS 25200 - Human Relations In Organizations
- OLS 38400 - Leadership Process
- OLS 47700 - Conflict Management

**Choose Two:**

- OLS 16300 - Fundamentals Of Self-Leadership
- OLS 35000 - Creativity In Business And Industry
- OLS 37600 - Human Resource Issues
- OLS 45400 - Gender And Diversity In Management
- OLS 47400 - Conference Leadership

## **Professional Supervision Undergraduate Certificate**

*Minimum 2.0 GPA required in Certificate courses.*

## **Required Courses (18 Credits)**

- OLS 25200 - Human Relations In Organizations
- OLS 33100 - Occupational Safety And Health
- OLS 37400 - Supervisory Management
- OLS 37500 - Training Methods
- OLS 37600 - Human Resource Issues

**Choose One:**

- OLS 35000 - Creativity In Business And Industry
- OLS 37800 - Labor And Management Relations
- OLS 45400 - Gender And Diversity In Management
- OLS 47400 - Conference Leadership

## **Safety Undergraduate Certificate**

*Minimum 2.0 GPA required in Certificate courses.*

## **Required Courses (15 Credits)**

- OLS 33100 - Occupational Safety And Health
- OLS 33200 - Fundamentals Of Industrial Hygiene
- OLS 33300 - Environmental Health And Safety Legislation And Standards

**Choose Two:**

- OLS 33400 - Fire Protection
- OLS 33600 - Fundamentals Of Risk Assessment And Management
- OLS 33700 - Introduction To Emergency Management
- OLS 43000 - Environmental Health And Safety Management

## **Department of Engineering Technology**

### **Bachelor of Science**

### **Electrical Engineering Technology, BS**

The program of Electrical Engineering Technology offers courses that emphasize practical aspects of engineering along with abstract concepts and theories. The courses are a blend of the application of engineering knowledge, scientific principles and technical skills used in modern industrial infrastructure. The Electrical Engineering Technology program at Purdue University Northwest is designed to inculcate students with an aptitude of applying their knowledge with scientific and objective reasoning. The mission of the Electrical Engineering Technology program is to provide career educational opportunities to students who have a hands-on aptitude and are oriented towards applications. The program offers academic preparation for careers in embedded computer systems, electrical power and renewable energy,

electronics, control, and telecommunications. The curriculum provides a strong background in technical subjects integrating theory with extensive hands-on laboratory training, mathematics, science, and rounding off with courses in humanities and general education. Students will complete a Senior Design Project, which is a one-year capstone individual/team project that provides the opportunity to pursue an idea from conception to design, then execute into a demonstrable project. The program's goal is to produce graduates who are equipped with marketable skills and potential for growth to meet the technical manpower needs of the society.

The Electrical Engineering Technology Bachelor of Science program is accredited by the Engineering Technology Accreditation Commission of ABET, Inc. <http://www.abet.org>. This ensures that the program is independently reviewed and meets the quality expectation for that profession.

**Options in EET:**

1. Power and Modern Energy Systems
2. Integrated Smart Electronic Systems

## Degree Requirements

### PNW General Education Core (31 Credits Minimum)

#### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 22000 - Technical Report Writing

#### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

#### Quantitative Reasoning (3 Credits)

- MA 14700 - Algebra And Trigonometry For Technology

#### Natural Sciences (4 Credits)

- PHYS 22000 - General Physics

#### Technology (3 Credits)

Select from the Technology Core list

#### Humanities (3 Credits)

Select from the Humanities Core list

#### Social Sciences (3 Credits)

- SOC 10000 - Introductory Sociology

#### Additional Credits (3 Credits)

Select a course from any Core list except FYE

#### First-Year Experience (FYE) (3 Credits)

- ECET 10001 - Introduction To Electrical And Computer Engineering Technology

### Major Core (89 Credits)

- ECET 10900 - Digital Fundamentals
- ECET 10201 - Direct Current Circuits And Components
- ECET 15900 - Digital Applications
- ECET 21000 - Structured C++ Programming For Electromechanical Systems
- MA 14800 - Algebra And Trigonometry For Technology II
- ECET 15201 - Alternating Current Circuits And Analysis
- ECET 15401 - Electronic Components And Circuits
- ECET 20901 - Microcontroller Applications
- ECET 21201 - Electrical Power And Motors
- MA 16019 - Applied Calculus I For Technology
- MA 16021 - Applied Calculus II And Differential Equations
- ECET 45600 - Operating System With Embedded System Design
- ECET 38400 - Advanced Mathematical Methods In EET

- ECET 30301 - Telecommunication Systems
- ECET 33100 - Generation And Transmission Of Electrical Power
- ECET 37301 - Renewable Energy Sources And Modeling
- ECET 39200 - Digital Signal Processing
- ECET 26200 - Programmable Logic Controllers
- ECET 31201 - Power Electronics Fundamentals
- IET 30800 - Engineering Project Management And Economic Analysis
- ECET 40400 - Wireless Communication And Networking
- ECET 36200 - Process Control Instrumentation
- ECET 45500 - Object Oriented System Design
- ECET 49000 - Senior Design Project Phase I
- ECET 49100 - Senior Design Project Phase II
- Independent Study/Internship/Wellness Credit Hours: 1.00
- 400 Level ECET Electives (2) Credit Hours: 6.00
- Humanities Elective Credit Hours: 3.00
- Social Science Elective Credits Hours: 3.00
- Science or Math Elective Credit Hours: 3.00

## Total 120 Credits Required

**Effective Fall 2016, newly admitted students or students initiating a Change of Degree or Major at either location (Hammond or Westville) will be pursuing the degree "Bachelor of Science with a major in Electrical Engineering Technology". Formerly, this degree option was known as "Bachelor of Science with a major in Engineering Technology, and a concentration in Electrical & Computer Engineering Technology" at the North Central campus.**

## Mechanical Engineering Technology, BS

The Bachelor of Science degree program in prepares graduates for technical positions in manufacturing and production industries. Students with a degree in mechanical engineering technology fill a wide variety of industrial positions in product development, manufacturing, production, supervision, and plant operations. Many graduates continue their careers into high level management positions.

The primary goal of the curriculum is to provide graduates with a solid technical foundation which will enable them to adapt and grow into a wide variety of employment opportunities. Students will complete a Senior Design Project, which is a one-year capstone individual/team project that provides the opportunity to pursue an idea from conception to design, then execute into a demonstrable project.

The mechanical engineering technology program is accredited by the Engineering Technology Accreditation Commission of ABET, Inc. <http://www.abet.org>.

## Degree Requirements

### PNW General Education Core (30 Credits Minimum)

#### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 22000 - Technical Report Writing

#### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

#### Quantitative Reasoning (3 Credits)

- MA 14700 - Algebra And Trigonometry For Technology

#### Natural Sciences (8 Credits)

- PHYS 22000 - General Physics
- PHYS 22100 - General Physics

#### Technology (1 Credit)

- MET 16100 - Introduction To Engineering Technology

### **Humanities (3 Credits)**

Select from the Humanities Core list

### **Social Sciences (3 Credits)**

Select from the Social Sciences Core list

### **First-Year Experience (FYE) (3 Credits)**

- MET 10000 - Production Drawing And Computer-Aided Design

### **Major Core (75 Credits)**

- MET 24200 - Manufacturing Processes II
- MA 14800 - Algebra And Trigonometry For Technology II
- MET 11800 - Applied Mechanics: Statics
- MET 14100 - Materials I
- MET 16200 - Computational Analysis Tools In MET
- MET 10100 - Introduction To Mechanical Engineering Technology
- MA 16019 - Applied Calculus I For Technology
- MET 21100 - Applied Strength Of Materials
- MET 21300 - Dynamics
- MET 10200 - Production Design And Specifications
- MET 23000 - Fluid Power
- MA 16021 - Applied Calculus II And Differential Equations
- MET 21501 - Applied Machine Elements
- ECET 21401 - Introduction To Electricity And Electronics
- MET 32900 - Applied Heat Transfer
- IET 30800 - Engineering Project Management And Economic Analysis
- STAT 30100 - Elementary Statistical Methods
- IET 35200 - Operations Management
- MET 38200 - Controls And Instrumentation For Automation
- OLS 30000 - Safety And Health For Engineering Technologies
- MET 32500 - Applied Thermodynamics I
- MET 46100 - Computer Integrated Design And Manufacturing
- MET 31300 - Applied Fluid Mechanics
- MET 49500 - Senior Project Survey
- MET 49700 - Senior Project

### **Other Required Courses (15 Credits)**

#### **MET/IET Electives (6 Credits)**

Any (2) 30000 level or higher MET or IET course with advisor approval.

#### **Tech/CHM Elective (3 Credits)**

Suggest a Chemistry (CHM) course or other course with advisor approval.

#### **COM/OLS Elective (3 Credits)**

Any COM or OLS course 30000 level and above

#### **Computer Programming Course (3 Credits)**

Any programming course from ECET or CIT with advisor approval.

### **Total 120 Credits Required**

## **Mechatronics Engineering Technology, BS**

The Mechatronics Engineering Technology program at Purdue University Northwest is a Synergistic integration of Mechanical, Electrical, Control, Hydraulics, High Speed Automation, Robotics, Networking, and Computer Systems

for Industry. Students will learn automation and industrial control, integration of robotics in advanced manufacturing, electrical power and machinery, computer aided design, production design and specification required for the closely aligned manufacturing and packaging industries. Industrial collaboration and internship reinforces course work and provides real world experience, an invaluable credential sought by industry. Students will complete a Senior Design Project, which is a one-year capstone individual/team project that provides the opportunity to pursue an idea from conception to design, then execute into a demonstrable project.

The Mechatronics Engineering Technology Bachelor of Science program is accredited by the Engineering Technology Accreditation Commission of ABET, Inc. <http://www.abet.org>. This ensures that the program is independently reviewed and meets the quality expectation for that profession.

## Degree Requirements

### PNW General Education Core (30 Credits Minimum)

#### English Composition (6 Credits)

- ENGL 10400 - English Composition I
- ENGL 22000 - Technical Report Writing

#### Speech Communication (3 Credits)

- COM 11400 - Fundamentals Of Speech Communication

#### Quantitative Reasoning (5 Credits)

- MA 15900 - Precalculus

#### Natural Sciences (4 Credits)

- PHYS 22000 - General Physics

#### Technology (3 Credits)

- MET 10000 - Production Drawing And Computer-Aided Design

#### Humanities (3 Credits)

Select from the Humanities Core list

#### Social Sciences (3 Credits)

Select from the Social Sciences Core list

#### First-Year Experience (FYE) (3 Credits)

- ET 10000 - Introduction To Engineering Technology

### Major Core (84 Credits)

- ECET 10900 - Digital Fundamentals
- MET 11800 - Applied Mechanics: Statics
- MET 24200 - Manufacturing Processes II
- ECET 10201 - Direct Current Circuits And Components
- MA 16019 - Applied Calculus I For Technology
- MET 21100 - Applied Strength Of Materials
- ECET 15201 - Alternating Current Circuits And Analysis
- MET 21300 - Dynamics
- MET 23000 - Fluid Power
- ECET 21201 - Electrical Power And Motors
- MCET 21700 - Introduction To Process Control
- ECET 26200 - Programmable Logic Controllers
- MA 16021 - Applied Calculus II And Differential Equations
- MET 14100 - Materials I
- MET 21501 - Applied Machine Elements
- MCET 47200 - Programmable Logic Controllers For Advanced Mechatronics Applications
- MET 42000 - Machine Design

- OLS 30000 - Safety And Health For Engineering Technologies
- IET 30800 - Engineering Project Management And Economic Analysis
- MCET 33000 - Industrial Programming And Networking
- ET 15100 - Career Planning
- OLS 47400 - Conference Leadership
- ECET 36200 - Process Control Instrumentation
- ET 49500 - Senior Project Survey
- MCET 46200 - Application Of Computers In Process Control
- OLS 35000 - Creativity In Business And Industry
- ET 49700 - Senior Project
- MCET 48200 - Application Of Industrial Robots For Advanced Manufacturing

### Other Required Courses (6 Credits)

### Concentration Electives (6 Credits)

Choose 2 of the following:

- MET 10200 - Production Design And Specifications
- MET 30500 - Computer-Aided Design With Applications
- MET 31300 - Applied Fluid Mechanics
- MET 31500 - Applied Mechanism Kinematics And Dynamics
- MET 32500 - Applied Thermodynamics I
- MET 32900 - Applied Heat Transfer
- MET 34700 - Programming Of Automation Systems
- MET 42100 - Air Conditioning And Refrigeration
- MET 46100 - Computer Integrated Design And Manufacturing (E X L)
- ECET 15400 - Analog Electronics I
- ECET 15900 - Digital Applications
- ECET 20900 - Introduction To Microcontrollers
- ECET 21000 - Structured C++ Programming For Electromechanical Systems
- ECET 31200 - Power Electronics
- ECET 45600 - Operating System With Embedded System Design
- IET 26400 - Fundamentals Of Lean Work Design
- IET 27300 - Principles Of Quality And Process Improvement
- IET 35500 - Statistical Process Control I
- IET 41100 - Applications Of Lean And Six Sigma Methodologies
- or other course approved by advisor.

### Total 120 Credits Required

### Minor

### Electrical and Computer Engineering Technology Minor

- This minor may be attached to any Purdue baccalaureate degree that permits minors.
- Within the minor, there are three options: Basic Electronics, Computer Electronics and Industrial Electronics. Students may choose the specific option that interests them.
- Courses may not be mixed between the various options.
- A minimum of 15 credit hours is required for the minor.
- MA 15300 or equivalent is a prerequisite for entry into the ECET Minor.
- Any three-credit or more programming class is a prerequisite for the Computer Electronics option.
- None of the courses for the ECET Minor may be taken Pass/No Pass.
- A grade of "C" or better must be maintained in all courses toward the Minor.

- Not available for students enrolled in or possessing a degree in EET or ECET.

### Basic Electronics Option (15 Credit Hours)

- ECET 10700 - Introduction To Circuit Analysis
- ECET 10900 - Digital Fundamentals
- ECET 15700 - Electronics Circuit Analysis
- ECET 15900 - Digital Applications

### Computer Electronics Option (15 Credit Hours)

- ECET 10900 - Digital Fundamentals
- ECET 15900 - Digital Applications
- ECET 20900 - Introduction To Microcontrollers
- ECET 35900 - PC Interfacing And Applications

### Industrial Electronics Option (15 Credit Hours)

- ECET 10900 - Digital Fundamentals
- ECET 15900 - Digital Applications
- ECET 30200 - Introduction To Control Systems

**Choose One:**

- ECET 10700 - Introduction To Circuit Analysis
- ECET 21300 - Survey Of Electricity And Electronics

## Honors College

John Rowan, Dean

Heather Fielding, Associate Dean

Vanessa Quinn, Associate Dean

Brandon Rukes, Program Coordinator

Michael Kenny, Academic Advisor

Amy Libauskas, Academic Advisor

Jennifer Fraga, Secretary

[www.pnw.edu/honors](http://www.pnw.edu/honors)

**Hammond Location:** SUL Building Room 320; Phone: 219-989-3160

**Westville Location:** Library Student Faculty Building room 069; Phone 219-785-5366

## Mission

The Honors College at Purdue University Northwest is dedicated to enhancing the learning experiences of highly motivated and academically exceptional students. Students in the Honors College engage in advanced coursework, community outreach, substantive research, study abroad, cultural and social activities, and regular interaction with the university's most outstanding students and professors. Through these kinds of special learning opportunities, the Honors College fosters academic excellence, critical thinking, vital leadership skills, social and civic responsibility, and other virtues required of outstanding citizens and leaders.

## Application

Available at [www.pnw.edu/honors](http://www.pnw.edu/honors). The application to the Honors College is separate from the application to the university. Although there are no firm criteria for admission, students with a high school GPA under 3.4 or SAT scores (or ACT equivalent) of under 1100 (verbal+math) will have difficulty being admitted. Applications, which require essays and letters of recommendation, are reviewed on the basis of academic achievement and promise, leadership potential, extracurricular involvement, personal character, and other factors relevant to the student's overall potential. Students are encouraged to apply as incoming freshmen, though there are some slots available for upper class students (transfer students or current Purdue Northwest students) who have completed no more than 66 credit hours and have a minimum of four semesters in residence remaining until graduation.

## Benefits

Scholarship (\$2500/year, provided requirements are maintained);

Membership in a community of like-minded, similarly motivated students;

Experiential learning, especially in areas of leadership, service and research;

Specialized courses with fellow Honors College students;

One-on-one research opportunities with university faculty;

Study Abroad scholarships available

No extra credit hours required; Honors College coursework is built into the student's plan of study. (Plans of study available on the Honors College website or in SUL 320.)

## Student Leadership

### Executive Board

*President:* Caitlyn Swan

*Vice President for Campus Life:* Matthew Kresich

*Vice President for College Media:* Emma Rose

*Vice Presidents for Student Engagement:* Brianna Buckner and Kasey Kulesa

*Vice Presidents for Student Mentoring:* Marines Chapa and Samantha Warren

*Vice Presidents for Student Research:* Jennifer Howard and Gina Marzilli



*Committees:* Academic and Cultural Events, Community Involvement, Newsletter, Social Events, Social Media, Yearbook

## Curriculum

### Curriculum (Incoming Freshman)

#### Semester 1

HONR 11100 Honors Cohort I

#### Semester 2

HONR 11200 Honors Cohort II

#### Semester 3

HONR 21100 Honors Cohort III

#### Semester 4 or 5

*Choose One:*

HONR 39000 Junior Level Topics

HONR 39100 Honors Humanities Topics

HONR 39200 Honors Social Science Topics

#### Semester 6

HONR 40000 Honors Capstone Project

#### Semester 7/8

Honors Thesis

#### Any of Semester 3-7

Honors Stacked Course

#### Honors Elective

### Curriculum (Upper Class Admission)

HONR 21200 Upperclass Introduction to Honors

#### Semester 4 or 5

*Choose One:*

HONR 39000 Honors Special Topics

HONR 39100 Honors Humanities Topics

HONR 39200 Honors Social Science Topics

#### Semester 6

HONR 40000 Honors Junior Seminar

#### Semester 7/8

Honors Thesis

#### Any of Semester 4-7

Honors Stacked Course

#### Honors Elective

**Additional Requirements:** Volunteer work; regular participation in Honors College activities; two annual individual meetings with Honors College advisor

**Honors Thesis Option:** Students not in the Honors College may submit a proposal to write an Honors Thesis. Students whose proposals are accepted enjoy benefits but do not receive a scholarship. Proposals should be submitted by the end of the student's sixth semester. Interested students should contact the Dean.

## Vision: Learn, Think, Lead

### Learn

*Foundations:* Students will acquire knowledge appropriate to their chosen programs of study;

*Perspectives:* Students will be exposed to new and diverse viewpoints about humanity and society;

*Exploration:* Students will develop a love of learning and the ability, going forward in life, to learn how to learn.

### Think

*Reflection:* Students will consider carefully the foundational knowledge they acquire and the various perspectives to which they are introduced;

*Analysis:* Students will master the ability to scrutinize particular viewpoints and their underlying rationales in an effort to identify what is sound and what is invalid;

*Synthesis:* Students will learn how to assemble into a coherent whole the tenable components of the viewpoints analyzed.

## **Lead**

*Vision:* Students will develop the comprehensive skills necessary to transform a coherent collection of tenable ideas into a tangible vision, complete with justification and prospects for feasible application.

*Communication:* Students will acquire the tools required to convey – verbally, in written form, graphically, technologically and in other ways – the substance of their visions to individuals, organizations and society at large.

*Citizenship:* Students will internalize the principle that individuals and institutions are part of a larger whole and will graduate with the understanding that outstanding leadership requires a strong sense of empathy and an ongoing awareness of how actions and practices can have local and global impacts.

# General Education Core List

## General Education Core List

Information regarding Statewide Transfer General Education Core (STGEC) can be found [here](#).

### First Year Experience

- BUSM 10000 - Freshman Seminar In Business
- BHS 10300 - Freshman Experience In Behavioral Sciences
- BIOL 10700 - Freshman Experience In Biological Sciences
- CHM 19400 - Freshman Chemistry Orientation
- CMET 10300 - Introduction To Construction Management
- COM 10300 - The Freshman Seminar In Communication
- CS 10000 - An Introduction To Computer Science
- ECET 10000 - Introduction To Electrical And Computer Engineering Technology
- ECON 10200 - Introduction To The Study Of Economics
- EDST 20000 - History And Philosophy Of Education
- EDST 27000 - Early Childhood Education
- ENGR 18600 - First Year Seminar For Engineers
- ET 10000 - Introduction To Engineering Technology
- FLL 10300 - Freshman Experience Worldviews
- GS 19100 - First-Year Experience I
- HTM 10000 - Introduction To The Hospitality And Tourism Industry
- HTM 10100 - Hospitality And Tourism Student Seminar
- ITS 10000 - Information Technology Fundamentals
- MA 10000 - An Introduction To Mathematical Sciences
- MET 16100 - Introduction To Engineering Technology
- NUR 18100 - Introduction To Professional Nursing
- OLS 16300 - Fundamentals Of Self-Leadership
- PHYS 19400 - Freshman Physics Orientation
- POL 20000 - Introduction To The Study Of Political Science
- PSY 10300 - Psychology First Year Experience
- SWRK 26100 - Introduction To Social Work

### English Composition

- ENGL 10000 - English Composition
- ENGL 10400 - English Composition I
- ENGL 10500 - English Composition II
- ENGL 10800 - Accelerated First-Year Composition
- ENGL 22000 - Technical Report Writing
- ENGL 30700 - Written And Oral Communication For Engineers
- ENGL 42000 - Business Writing

### Humanities

- AD 25500 - Art Appreciation
- BUSM 10100 - Introduction To Business  
OR GBG12700 Development of Business in the United States
- COM 24000 - Introduction To Oral Interpretation
- ENGL 20100 - The Nature Of Literary Study
- ENGL 20500 - Introduction To Creative Writing

- ENGL 21600 - Ethics And Literature
- ENGL 22100 - Introduction To Shakespeare
- ENGL 23100 - Introduction To Literature
- ENGL 23500 - Introduction To Drama
- ENGL 23700 - Introduction To Poetry
- ENGL 23800 - Introduction To Fiction
- ENGL 24000 - Survey Of The British Literature: From The Beginnings Through The Neoclassical Period
- ENGL 24100 - Survey Of The British Literature: From The Rise Of Romanticism To The Modern Period
- ENGL 25700 - Literature Of Black America
- ENGL 26600 - World Literature: From The Beginnings To 1700 A.D.
- ENGL 26700 - World Literature: From 1700 A.D. To The Present
- ENGL 28600 - The Movies
- ENGL 35000 - Survey Of American Literature From Its Beginnings To 1865
- ENGL 35100 - Survey Of American Literature From 1865 To The Post-World War II Period
- ETHN 20100 - The Hispanic American Experience
- GBG 25900 - Law And Society
- HIST 10200 - Introduction To The Ancient World
- HIST 10300 - Introduction To The Medieval World
- HIST 10400 - Introduction To The Modern World
- HIST 10500 - Survey Of Global History
- HIST 11000 - The Pre-Modern World
- HIST 15100 - American History To 1877
- HIST 15200 - United States Since 1877
- HIST 31600 - History Of Architecture II
- IDIS 23500 - Introduction To Great Issues
- LALS 10100 - Introduction To Latin American Studies
- MUS 25000 - Music Appreciation
- PHIL 10600 - Human Experience In Art Literature, Music, And Philosophy
- PHIL 11000 - Introduction To Philosophy
- PHIL 11100 - Ethics
- PHIL 12000 - Critical Thinking
- PHIL 15000 - Principles Of Logic
- PHIL 20600 - Philosophy Of Religion
- PHIL 21900 - Introduction To Existentialism
- PHIL 32400 - Ethics For The Professions
- SPAN 23500 - Spanish American Literature In Translation
- SPAN 24100 - Introduction To The Study Of Hispanic Literature
- SPAN 33500 - The Literature Of The Spanish-Speaking Peoples In The United States
- THTR 20100 - Theatre Appreciation
- THTR 30800 - The History And Development Of The American Musical Theatre

## Natural Sciences

- ASTR 26300 - Descriptive Astronomy: The Solar System
- ASTR 26400 - Descriptive Astronomy: Stars And Galaxies
- BIOL 10008 - Foundation Of Biology
- BIOL 10100 - Introductory Biology
- BIOL 10200 - Introductory Biology
- BIOL 11000 - Fundamentals Of Biology I

- BIOL 14300 - Current Topics In Modern Biology
- BIOL 21000 - Field Biology
- BIOL 21300 - Human Anatomy And Physiology I
- BIOL 22200 - Aids Online International
- BIOL 30300 - Birds Of Northwest Indiana
- BIOL 32400 - Natural History of the Smoky Mountains
- BIOL 32500 - Natural History of North West Indiana
- CHM 10300 - Chemistry & Society
- CHM 11100 - General Chemistry
- CHM 11500 - General Chemistry
- CHM 11600 - General Chemistry
- CHM 11900 - General Chemistry
- EAS 10000 - Planet Earth
- EAS 10400 - Oceanography
- EAS 11000 - Survey Of Geology
- EAS 11300 - Introduction To Environmental Science
- EAS 12000 - Introduction To Geography
- EAS 22000 - Survey Of Physical Geography
- EAS 22200 - Weather Studies
- FIS 14000 - Introduction To Forensic Science: Criminalistics
- FIS 14005 - Introduction To Forensic Science: Evidence Handling
- FN 30300 - Essentials Of Nutrition
- PHYS 15200 - Mechanics
- PHYS 22000 - General Physics
- PHYS 22100 - General Physics
- PHYS 25100 - Heat, Electricity And Optics
- PHYS 30300 - History And Philosophy Of Science
- SCI 10300 - Survey Of The Biological World
- SCI 10400 - Introduction To Environmental Biology
- SCI 10500 - Invitation To Human Biology
- SCI 10601 - Food Chemistry
- SCI 11200 - Introduction To The Physical Sciences I
- SCI 11300 - Introduction To The Physical Sciences II
- SCI 11400 - Introduction to Life Science
- SCI 12200 - Origin Of The Universe
- SCI 13100 - Science And Environmental Issues
- SCI 15000 - Brewing Science
- SCI 20200 - Environmental Science

## Oral Communication

- COM 11400 - Fundamentals Of Speech Communication

## Quantitative Reasoning

- BUSM 10500 - Quantitative Methods For Business
- BUSM 22500 - Fundamental Managerial Statistics
- CGT 11000 - Technical Graphics Communications
- CNIT 12700 - Microcomputer Spreadsheet Applications
- CNIT 26700 - Introduction To C++ Language Programming
- ECON 25100 - Microeconomics

- ECON 25200 - Macroeconomics
- ENGR 18900 - C++ Language Programming For Engineering and Technology Applications
- IET 35200 - Operations Management
- MA 12301 - Mathematical Ideas
- MA 13700 - Mathematics For Elementary Teachers I
- MA 13800 - Mathematics For Elementary Teachers II
- MA 13900 - Mathematics For Elementary Teachers III
- MA 14700 - Algebra And Trigonometry For Technology
- MA 15200 - College Algebra
- MA 15300 - College Algebra
- MA 15400 - Trigonometry
- MA 15900 - Precalculus
- MA 15910 - Introduction To Calculus
- MA 16031 - Calculus I For Life Sciences
- MA 16100 - Plane Analytic Geometry And Calculus I
- MA 16200 - Plane Analytic Geometry And Calculus II
- MA 16300 - Integrated Calculus Analysis Geometry I
- MA 16700 - Plane Analytical Geometry & Calculus I
- MA 16900 - Plane Analytical Geometry And Calculus II
- MA 21300 - Finite Mathematics I
- MA 22300 - Introductory Analysis I
- MA 22400 - Introductory Analysis II
- MA 26100 - Multivariate Calculus
- MA 26200 - Linear Algebra And Differential Equations
- MET 16200 - Computational Analysis Tools In MET
- MET 29900 - Mechanical Engineering Technology
- PSY 20100 - Introduction To Statistics In Psychology
- SOC 38200 - Introduction To Statistics In Sociology
- STAT 11300 - Statistics And Society
- STAT 13000 - Statistics And Contemporary Life
- STAT 30100 - Elementary Statistical Methods

## Social Sciences

- ANTH 10000 - Introduction To Anthropology
- ANTH 10500 - Cultural Anthropology
- BUSM 38000 - International Business
- COM 20400 - Critical Perspectives On Communication
- COM 21200 - Approaches To The Study Of Interpersonal Communication
- COM 25000 - Mass Communication And Society
- COM 32000 - Small Group Communication
- COM 32400 - Introduction To Organizational Communication
- ECON 10100 - Survey Of Economics
- EDFA 20000 - History And Philosophy Of Education
- FIN 24000 - Personal Financial Management
- HDFS 21000 - Introduction To Human Development
- OLS 25200 - Human Relations In Organizations
- POL 10100 - American Government And Politics
- POL 13000 - Introduction To International Relations

- POL 14100 - Governments Of The World
- PSY 12000 - Elementary Psychology
- PSY 24000 - Introduction To Social Psychology
- PSY 34400 - Human Sexuality
- SOC 10000 - Introductory Sociology
- SOC 22000 - Social Problems

## Technology

- ARET 11700 - Construction Drafting And CAD
- BCM 10001 - Introduction To Construction
- CGT 11000 - Technical Graphics Communications
- CGT 14100 - Internet Foundations Technologies And Development
- CIS 16600 - Introduction To Programming
- CIS 20400 - Introduction To Computer-Based Systems
- CIS 30400 - Advanced Computer Utilization
- CNIT 10700 - Computers And Software Packages
- CNIT 12100 - Microcomputer Database Applications
- CNIT 12600 - Website Development And Internet Technologies
- CNIT 12800 - Advanced Word Processing
- CNIT 17500 - Visual Programming
- CNIT 17600 - Information Technology Architectures
- CNIT 18000 - Introduction To Systems Development
- CNIT 19000 - CNIT Problem Solving
- CNIT 26700 - Introduction To C++ Language Programming
- COM 25000 - Mass Communication And Society
- COM 26100 - Introduction To Digital Video Production
- CPET 29900 - Selected Computer Engineering Technology Subject
- CS 12300 - Programming I: Java
- CS 20600 - Computer Algebra And Programming
- CS 22000 - Programming I For Engineers And Scientists
- ECET 10700 - Introduction To Circuit Analysis
- ECET 10900 - Digital Fundamentals
- ECET 11000 - Computer Systems Architecture
- ECET 15700 - Electronics Circuit Analysis
- ECET 15900 - Digital Applications
- ECET 20900 - Introduction To Microcontrollers
- ECET 21300 - Survey Of Electricity And Electronics
- ECON 21100 - Contemporary Economic Problems
- ECON 25200 - Macroeconomics
- EDCI 12000 - Technology In Society: Online Communication And Publishing
- EDCI 13000 - Technology In Society: Digital Media And Learning
- EDCI 26000 - Introduction To Computers In Education
- EDCI 27000 - Introduction To Educational Technology And Computing
- EDCI 32300 - Educational Technology For Teaching And Learning
- ENGR 15100 - Software Tools For Engineers
- ENGR 18900 - C++ Language Programming For Engineering and Technology Applications
- FIN 24000 - Personal Financial Management
- IET 10400 - Industrial Organization

- IET 35200 - Operations Management
- ISM 10200 - Computer Utilization For Management
- ISM 21100 - Principles Of Information Systems
- ITS 10000 - Information Technology Fundamentals
- ITS 11000 - Web Systems Technology
- ITS 20000 - Ethical And Legal Issues IT
- MET 10000 - Production Drawing And Computer-Aided Design
- MET 14100 - Materials I
- MET 29900 - Mechanical Engineering Technology
- NUR 35300 - Health Care Informatics
- NUR 45100 - Nursing Informatics



# Course Descriptions

Class Schedule

## Accounting

### ACC 12000 - Principles Of Accounting I

Credit Hours: 3.00. A basic introduction to accounting practices, financial statements, and the accounting cycle in various forms of business organizations. Emphasis is on the accounting of assets, liabilities and owner's equity. This course is not open to Management majors. Typically offered Summer Fall Spring.

### ACC 12100 - Principles Of Accounting II

**Prerequisite(s):** (BA 12000 FOR LEVEL UG WITH MIN. GRADE OF C OR ACC 12000 FOR LEVEL UG WITH MIN. GRADE OF C) AND (BA 10500 FOR LEVEL UG WITH MIN. GRADE OF C OR BUSM 10500 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 3.00. A continuation of ACC 12000. Emphasis is on reporting issues including financial and cash flow statements. Typically offered Summer Fall Spring.

### ACC 20000 - Introductory Accounting

Credit Hours: 3.00. The objectives of the course are to help students: (1) understand what is in financial statements and what the statements say about a business, (2) identify the business activities that caused the amounts that appear in the statements, and (3) understand how, when, and at what amount the effects of manager and employee actions will appear in the statements. Typically offered Fall Spring Summer.

### ACC 20100 - Management Accounting I

**Prerequisite(s):** (ACC 20000 FOR LEVEL UG WITH MIN. GRADE OF C OR MGMT 20000 FOR LEVEL UG WITH MIN. GRADE OF C) AND MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An introduction to the system by which accounting data is gathered from economic events. The course is designed to help students (1) understand what is in financial statements and what the statements say about a business, (2) identify the business activities that caused the amounts that appear in the statements, and (3) understand how, when, and at what amount the effects of manager and employee actions will appear in the statements. Typically offered Fall Spring Summer.

### ACC 35000 - Intermediate Accounting I

**Prerequisite(s):** ACC 20100 FOR LEVEL UG WITH MIN. GRADE OF C- OR MGMT 20100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Accounting theory and principles of asset valuation and income determination concentrating on the preparation of financial statements, case, receivables, inventory, fixed assets, and intangible assets. Typically offered Fall Spring Summer.

### ACC 35100 - Intermediate Accounting II

**Prerequisite(s):** ACC 35000 FOR LEVEL UG WITH MIN. GRADE OF C- OR GBA 34000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Accounting theory and principles of investments, liabilities and stockholders' equity with emphasis on contingencies, contributed capital, retained earnings, earnings per share, pensions, leases, incomes taxes, and cash flow analysis. Typically offered Fall Spring Summer.

### ACC 40200 - Financial Statements Analysis

**Prerequisite(s):** (ACC 35100 FOR LEVEL UG WITH MIN. GRADE OF C- OR GBA 34100 FOR LEVEL UG WITH MIN. GRADE OF C- AND FIN 31000 FOR LEVEL UG WITH MIN. GRADE OF C-) OR GBG 33300 FOR LEVEL UG WITH MIN. GRADE OF C- OR FIN 34000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A course focused on the ability to use published financial statement information and related disclosures to assess the performance and value of an enterprise. Equity analysis, credit analysis, prospective analysis, cash flow analysis, and firm valuation are covered. Typically offered Fall Spring Summer.

### ACC 40301 - Accounting Field Experience

Credit Hours: 3.00. This course provides an experiential learning experience while students learn about the international Financial Reporting Standards (IFRS) which are being used in more than 100 other countries and are being considered by the USA. Permission of department required. Typically offered Summer.

### ACC 40400 - Tax Accounting

**Prerequisite(s):** ACC 35000 FOR LEVEL UG WITH MIN. GRADE OF C- OR GBA 34000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An introductory course that emphasizes the taxation of individuals and sole proprietorships. A

study of taxation law cases will be explored, but course will concentrate on practical applications of federal tax form preparation as it pertains to gross income inclusions/exclusions, adjustments, deductions, credits, and penalties. A computerized tax program will be used by the students. Selected topics include: sale of capital assets, deferred compensations plans, IRS practice and procedures, and personal tax planning. Typically offered Fall Spring Summer.

### **ACC 40600 - Auditing**

**Prerequisite(s):** ACC 35100 FOR LEVEL UG WITH MIN. GRADE OF C- OR GBA 34100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An introduction to the concepts and procedures of auditing, with special attention to standards, professional ethics, planning, internal control, evidence and the legal liability inherent in the attest function. Independent, governmental, internal, and international audit topics may also be addressed. Typically offered Fall Spring Summer.

### **ACC 40700 - Managerial/Cost Accounting**

**Prerequisite(s):** ACC 20100 FOR LEVEL UG WITH MIN. GRADE OF C- OR MGMT 20100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A course focused on the application of managerial and cost accounting concepts for the purpose of achieving the strategic objectives of firms. Typically offered Fall Spring Summer.

### **ACC 40800 - Government Accounting**

**Prerequisite(s):** MGMT 35000 FOR LEVEL UG WITH MIN. GRADE OF C OR ACC 35000 FOR LEVEL UG WITH MIN. GRADE OF C OR GBA 34000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course examines the accounting requirements of the three major activities of state and local governments: governmental activities; business activities; and fiduciary activities. Fund accounting and treatment of capital assets and long-term liabilities in governmental systems will be examined as well as the contents of a comprehensive annual financial report (CAFR). Typically offered Fall Spring.

### **ACC 40900 - Accounting Information Systems**

**Prerequisite(s):** ACC 35000 FOR LEVEL UG WITH MIN. GRADE OF C- OR GBA 34000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A course which emphasizes computerized accounting information systems, transaction cycles, systems development, and internal control. Projects include the use of business software. Typically offered Fall Spring Summer.

### **ACC 41000 - Advanced Financial Accounting**

**Prerequisite(s):** MGMT 35100 FOR LEVEL UG WITH MIN. GRADE OF C OR ACC 35100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This is an advanced course in financial accounting. A range of contemporary topics in financial reporting such as business combinations and consolidations, foreign transactions, partnerships, governmental and not-for-profit accounting are covered. Typically offered Fall Spring.

### **ACC 49000 - Independent Study In Accounting Practice Or Research**

Credit Hours: 1.00 to 3.00. A course focused on independent research and communication of accounting information under the guidance of a faculty member. Permission of department required. Permission of instructor required. Typically offered Fall Spring Summer.

### **ACC 49500 - Internship In Accounting**

Credit Hours: 1.00 to 4.00. A special course in selected areas of accounting, designed to provide practical field experience under professional supervision in selected situations related to the student's area of specialization. Designed to provide practical field experience in selected areas of accounting under professional supervision. Typically offered Fall Spring Summer.

### **ACC 49510 - Internship In Tax Accounting**

Credit Hours: 1.00 to 3.00. An experiential, service-learning, opportunity for students in the area of personal tax preparation. The course provides students with hands on experience in preparing income tax returns for the public utilizing income tax preparation software. Opportunities through VITA or AARP volunteer tax preparation as well as, public accounting firms is provided. Permission of instructor required. Typically offered Fall Spring Summer.

### **ACC 49900 - Undergraduate Research In Accounting**

Credit Hours: 3.00. Students will work with a faculty member on a research project in their major. They will contribute to ongoing research while learning current research techniques in management. During this process the students will develop critical thinking and oral and written communication skills. Typically offered Fall Spring Summer.

## **Aeronautical and Astronomy Engineering**

### **AAE 54700 - Experimental Stress Analysis**

Credit Hours: 3.00. Theory and application of photoelastic, electric strain gage, and brittle lacquer methods of experimental solution of 2- and 3-D structures problems for static and dynamic loadings. Introductions to holography, moiré, and photoviscoelasticity. Typically offered Spring.

## **Animal Sciences**

### **ANSC 10100 - Animal Agriculture**

Credit Hours: 3.00. Importance of livestock in the field of agriculture, and the place of meats and other animal products in the human diet. Course not available for students enrolled at the West Lafayette campus. Credit cannot be obtained for both ANSC 10100 and ANSC 10200. Offered at regional campuses, Vincennes University, and other distance education sites. Typically offered Fall Spring Summer.

### **ANSC 22100 - Principles Of Animal Nutrition**

**Prerequisite(s):** CHM 11500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Classification and function of nutrients, deficiency symptoms, digestive processes, characterization of feedstuffs, and formulation of diets for domestic animals. Typically offered Summer Fall Spring.

## **American Sign Language**

### **ASL 10100 - American Sign Language I**

Credit Hours: 3.00. A basic introduction to American Sign Language. This course introduces students to the tools for mastering the grammar at a basic expressive and receptive level. Introduction to cultural and historical aspects of ASL and the deaf community. Typically offered Fall Spring Summer.

### **ASL 10200 - American Sign Language II**

**Prerequisite(s):** ASL 10100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A continuation of ASL 10100. Further study of the language with more emphasis on receptive and expressive conversational skills. Includes readings of research studies relevant to lectures. Typically offered Fall Spring Summer.

### **ASL 20100 - American Sign Language III**

**Prerequisite(s):** ASL 10200 FOR LEVEL UG WITH MIN. GRADE OF B

Credit Hours: 3.00. A more advanced study of American Sign Language. Further development of receptive and expressive skills using more advanced material. Continued emphasis on cultural and historical aspects in relation to the evolution of the language and language usage. Typically offered Summer Fall Spring.

### **ASL 20200 - American Sign Language IV**

**Prerequisite(s):** ASL 20100 FOR LEVEL UG WITH MIN. GRADE OF B

Credit Hours: 3.00. A continuation of ASL 20100. Includes some introduction to linguistic structure, especially classifiers, temporal sequencing and aspect, and conversational regulators. Typically offered Fall Spring.

### **ASL 28000 - American Deaf Community: Language, Culture, And Society**

Credit Hours: 3.00. The linguistic, cultural, and societal context of the deaf community in America. Both historical and contemporary aspects of deaf identity will be included, with an emphasis on the central role that ASL plays in the lives of deaf individuals. Typically offered Spring.

## **Anthropology**

### **ANTH 10000 - Introduction To Anthropology**

Credit Hours: 3.00. A general introduction to anthropology's holistic approach to human nature and behavior. A basic survey of biocultural developmental and evolutionary processes, and human uniformity and diversity through time and across space. Typically offered Summer.

### **ANTH 10500 - Cultural Anthropology**

Credit Hours: 3.00. A survey of the principles underlying variations in human culture and behavior. Emphasis is on culture as an adaptive mechanism and on how societies function. Topics include technology, social organization, economy, politics, ideology, and language. Typically offered Fall Spring.

### **ANTH 20400 - Introduction To Biological Anthropology And Human Evolution**

Credit Hours: 3.00. This course surveys biological anthropology through a review of evolutionary theory and genetics, the fossil evidence for current theories in human evolution with insight from modern non-human primates, and the influence of environmental stressors on modern human biological variation. Typically offered Fall Spring Summer.

### **ANTH 20500 - Human Cultural Diversity**

Credit Hours: 3.00. Using concepts and models of cultural anthropology, this course will survey the principal cultural types of the world and their distribution, and will undertake a detailed analysis of societies representative of each type. Typically offered Fall Spring.

**ANTH 23000 - Gender Across Cultures**

Credit Hours: 3.00. Explores gender and sexuality from a cross-cultural perspective. Draws on case studies to explore the complexities of women's and men's lives. Examines gender hierarchies, gender in a globalized world, and the cultural construction of sexuality and gender. Typically offered Summer Fall Spring.

**ANTH 34100 - Culture And Personality**

Credit Hours: 3.00. A cross-cultural survey stressing different basic personality types and the processes by which adult personality is acquired. Case studies of selected non-Western cultures will be used to provide comparative perspective. Typically offered Fall Spring Summer.

**ANTH 35201 - Drugs Culture And Society**

Credit Hours: 3.00. (SOC 35201) The course provides an overview of the social and cultural underpinnings of drug use across societies. Students engage with various topics including addiction, global markets, drug epidemics, public policy, and cross-cultural differences in drug use. Typically offered Fall Spring Summer.

**ANTH 37900 - Native American Cultures**

Credit Hours: 3.00. General survey of Native cultures of the Americas. Topics to be covered include prehistory, language, religion, aesthetics, culture contact and change, contemporary issues, and social, economic and political organization. Typically offered Fall (and occasionally in the Spring).

**ANTH 39200 - Selected Topics In Anthropology**

Credit Hours: 1.00 to 3.00. Various topics in anthropology that may change from semester to semester are presented by anthropology faculty members. Typically offered Fall Spring Summer.

**ANTH 41400 - Introduction To Language And Culture**

**Prerequisite(s):** ANTH 10500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An exploration into the nature of human communication, particularly the structures, functions, and substance of human language. Focus is on the interpenetration of language, culture and cognition, on the evolution of language and speech, and on their uses in everyday life. Typically offered Fall.

**ANTH 47800 - Native Cultures Of The Great Lakes Woodlands**

Credit Hours: 3.00. Native cultures that developed in the Great Lakes region from prehistoric times through the present will be examined through archaeology, ecology, technology, social organization, and world views of specific tribes (Chippewa, Illinois, Iroquois, Potawatomi, Miami, Ottawa, etc.). Typically offered Spring.

**ANTH 50500 - Culture And Society**

Credit Hours: 3.00. An introduction to cultural anthropology for the advanced student. A review will be made of the history of anthropology and its place in the social sciences. Emphasis will be placed on problem formulation and methodology in the study of culture change. Typically offered Fall.

**ANTH 50700 - Theory In Sociocultural Anthropology**

Credit Hours: 3.00. Theoretical orientations (evolutionism, historicism, functionalism, cultural ecology), types of culture theory (technoeconomics, social structure, ideology, personality), and methods of formal analysis (ethnoscience, structuralism, symbolic) will be examined. Typically offered Fall.

**ANTH 51400 - Anthropological Linguistics**

Credit Hours: 3.00. An introduction to the anthropological view of linguistics and the ways in which anthropologists use linguistics as a research tool. The emphasis will be on structural and historical linguistics, but other approaches to the study of language will be considered. Typically offered Spring.

**ANTH 59000 - Individual Research Problems**

Credit Hours: 1.00 to 3.00. Individual research or reading in an area of anthropology under an anthropology staff member. Does not include thesis work. Permission of instructor required. Typically offered Fall Spring Summer.

**Arabic****ARAB 10100 - Standard Arabic Level I**

Credit Hours: 3.00. Introduction to Modern Standard Arabic: the writing and sound systems, and systematic presentation of basic grammatical structures. Reading, writing, and vocabulary building are emphasized throughout. The course also includes an introduction to Arab culture. No previous knowledge of Arabic required. Typically offered Fall Spring.

**ARAB 10200 - Standard Arabic Level II**

**Prerequisite(s):** ARAB 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Further study of Modern Standard Arabic. Continued presentation of the basic structures of Arabic grammar and expansion of vocabulary. Reading and writing will be emphasized. Typically offered Fall Spring.

**Architectural Engineering Technology****ARET 11700 - Construction Drafting And CAD**

Credit Hours: 3.00. Introduction to drafting fundamentals with emphasis on architectural and civil engineering topics. Develop basic drafting skills, using orthographic projections, auxiliary views and perspectives. Students will be introduced to the fundamentals of CAD. Typically offered Fall Spring.

### **ARET 17000 - Materials and Systems Of Construction**

Credit Hours: 3.00. An introduction to the nature of the construction industry and a survey of the most commonly used construction materials with special emphasis on their properties characteristics, limitations and applications into different construction elements and systems such as foundations columns, trusses, arches, frames, etc. Guest speakers will discuss the nature and opportunities within the construction industry. Typically offered Fall Spring.

### **ARET 22200 - Architectural Engineering Construction II**

**Prerequisite(s):** ARET 11700 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Preparation of preliminary and working drawings for an intermediate-sized commercial or institutional building. Typically offered Spring.

### **ARET 25000 - Architectural Construction I**

**Prerequisite(s):** ARET 11700 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A study of wood frame construction through a semester project requiring planning, preliminary and working drawings, and laboratory experience in wood framing. Field trips may be included. Typically offered Fall Spring Summer.

### **ARET 27600 - Construction Specifications And Contracts**

**Prerequisite(s):** ARET 25000 FOR LEVEL UG WITH MIN. GRADE OF C OR CET 20800 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Analyze the content and organization of specifications and how they relate to working drawings during construction. A study of the various types of contract documents used for construction. Typically offered Spring.

### **ARET 28300 - Mechanical And Electrical Equipment For Buildings**

Credit Hours: 3.00. A survey of basic environmental systems, including heating ventilating, air conditioning, plumbing, lighting and electrical equipment. A discussion of standard design parameters including an introduction to heat loss and heat gain calculations and circuit loads. Emphasis is placed on definitions, types of systems and the physical characteristics of equipment. Typically offered Fall Spring.

### **ARET 29900 - Architectural Engineering Technology**

Credit Hours: 1.00 to 4.00. This is a variable course. Hours and subject matter to be arranged with staff. Typically offered Fall Spring Summer.

### **ARET 31200 - History Of Architecture II**

Credit Hours: 3.00. The study of western architecture of the eighteenth, nineteenth, and twentieth centuries with an emphasis on the related structural, technological, socioeconomic and cultural influences that caused the architectural expressions of this periods. Not open to students with credit in HIST 316. Typically offered Fall.

### **ARET 42500 - Solar Construction**

Credit Hours: 3.00. A study of building orientation, energy conservation principles, insulation, and a survey of passive and active solar energy systems. An investigation of building materials and systems of construction as they relate to passive solar energy systems. Typically offered Fall Spring Summer.

### **ARET 49900 - Architectural Engineering Technology**

Credit Hours: 1.00 to 6.00. Hours, subject matter and credit to be arranged with staff. Typically offered Fall Spring Summer.

## **Architectural Technology**

### **ART 15000 - Architect Construction I**

**Prerequisite(s):** CGT 11000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A study of wood frame construction through a semester project requiring planning and working drawings. Field trips may be included.. Typically offered Fall Spring.

### **ART 21000 - History Of Architecture I**

Credit Hours: 3.00. Survey of styles and influence of cultures which led to the development of architecture and engineering from the earliest times to the early 20th century. Typically offered Fall Spring.

### **ART 28900 - Plans And Specifications**

**Prerequisite(s):** MA 11100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course will cover reading and interpretation of contact documents for construction. Emphasis will be on plans and specifications for a variety of structures. Typically offered Fall Spring Summer.

## **ART 29900 - Architectural Engineering Technology**

**Prerequisite(s):** MA 11100 FOR LEVEL UG WITH MIN. GRADE OF D OR MA 15300 FOR LEVEL UG WITH MIN. GRADE OF D OR MA 15400 FOR LEVEL UG WITH MIN. GRADE OF D OR MA 22300 FOR LEVEL UG WITH MIN. GRADE OF D OR MA 22400 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 1.00 to 4.00. Hours and subject matter to be arranged with staff. Typically offered Spring Summer Fall.

## **Art and Design**

### **AD 10500 - Design I**

Credit Hours: 3.00. Two-dimensional design fundamentals: concepts and processes. Studio problems are used to introduce concepts, vocabulary, and skills applicable to continued study in a variety of visual disciplines. Includes introduction to a variety of two-dimensional media and computer applications. Typically offered Summer Fall Spring.

### **AD 10600 - Design II**

Credit Hours: 3.00. Three-dimensional fundamentals: concepts and processes. Studio problems introduce design concepts, vocabulary, and construction skills applicable to continued study in a variety of visual disciplines. Includes introduction to a variety of 3-D media and 3-D computer graphics concepts. Typically offered Summer Fall Spring.

### **AD 11200 - Graphic Arts I: Typography**

Credit Hours: 3.00. Students investigate mechanics of type, using both type and letter forms in a variety of design applications. Students will also experiment with typographic composition, contrast, text, and value in combination with language. Typically offered Summer Fall Spring.

### **AD 11300 - Basic Drawing**

Credit Hours: 3.00. An introduction to drawing and sketching as a means of communication of ideas. Typically offered Summer Fall Spring. CTL:IFA 1320 Drawing

### **AD 11400 - Drawing II**

**Prerequisite(s):** AD 11300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Continuation of A&D 11300; emphasis is given to the exploration of a variety of media, the structuring of pictorial space, and figure drawing. Typically offered Fall Spring.

### **AD 14000 - Entrepreneurship In Arts And Design**

Credit Hours: 3.00. Basic business skills are surveyed and case studies of successful self-employed artists and entrepreneurs will be studied to develop a broad understanding of this important force in the economy. Guest speakers and selected readings will introduce the student to the scope of opportunities that exist for converting artistic and design skills into self-employment and entrepreneurship. Typically offered Fall Spring.

### **AD 20300 - Art Activities For Elementary Teachers**

Credit Hours: 2.00. An undergraduate course designed to assist the student in gaining basic skills in art media and method as a beginning classroom teacher. This exposure to the basic art program should provide a stimulating, enrichment art program for the classroom. Typically offered Fall Spring Summer.

### **AD 20400 - Graphic Arts II: Digital**

Credit Hours: 3.00. This course introduces the computer as a powerful tool for manipulating and creating images. Students are encouraged to use their own photography and develop their own styles. Adobe Photoshop software package is the primary image processing program used to digitally enhance, alter and retouch images. Electronic layout and typographical issues are discussed, and a page layout program is introduced to combine text with image. Typically offered Summer Fall Spring.

### **AD 22200 - Introduction to Photography**

Credit Hours: 3.00. This course presents a study of basic photographic technique from a practical and artistic point of view. Students will be presented with the opportunity to develop aesthetic and compositional skills while building a portfolio of significant images. A 35mm camera with adjustable controls or a digital camera is required. Typically offered Summer Fall Spring.

### **AD 23800 - Integrated Fine Arts**

Credit Hours: 3.00. This course examines children's creative expression and physical development through movement, art, drama, and music. Topics include theories, stages and types of movement; health and safety issues; developmental stages of art; listening and interpreting music; and creative drama experiences as an integral part of the total curriculum. Typically offered Fall Spring Summer.

### **AD 25500 - Art Appreciation**

Credit Hours: 3.00. Understanding and appreciation of the problems overcome by mankind in the origins and growth of art. Typically offered Fall Spring. CTL:IFA 1310 Art Appreciation

### **AD 29000 - Special Topics In Art And Design**

Credit Hours: 1.00 to 3.00. Topics will vary.. Permission of department required. Typically offered Spring Fall.

### **AD 30102 - Color And Composition**

Credit Hours: 3.00. The study of color theory and compositional systems. Additive and subtractive color, discussions of color and its relationship to composition, through harmony and contrast, will be explored in a studio setting. Typically offered Fall Spring Summer.

### **AD 31002 - Painting I**

Credit Hours: 3.00. An introduction to the materials and techniques of painting, emphasizing a professional approach to content and expression. Typically offered Fall Spring Summer.

### **AD 32800 - Visual Communication Design I**

Credit Hours: 3.00. A course designed to introduce creative problem-solving with emphasis on 2-D solution to conceptual problems in the areas of publication and promotional graphics using word, image and layout. Typically offered Fall Spring Summer.

### **AD 32900 - Visual Communication Design II**

**Prerequisite(s):** AD 32800 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A course designed to introduce continuation of translation of concept into form with emphasis on corporate visual identity system. Typically offered Fall Spring Summer.

### **AD 38300 - Modern Art**

Credit Hours: 3.00. A comprehensive overview of the visual arts from impressionism to Surrealism, designed to help students understand the cultural, social, and historical dynamics that influence artistic creation, and reflect upon the meanings of modernism. Typically offered Fall Spring.

### **AD 39200 - Special Topics In Art**

Credit Hours: 1.00 to 3.00. Topics will vary. Typically offered Summer Fall Spring.

### **AD 40300 - Portfolio Process And Presentation**

Credit Hours: 3.00. The process of organizing, editing, and packaging work in a cohesive system will be illustrated in lecture, individualized studio projects, and on-site portfolio reviews. The course will focus on presentation as well as the building of the portfolio and students will participate in discussions, critiques, resume preparation, and mock interviews. Copyright issues and ownership of work will also be discussed. Typically offered Summer Fall Spring.

### **AD 41000 - Painting II**

**Prerequisite(s):** AD 31000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Individual problems in representational and non-representational painting with emphasis upon the development of an individual point of view. Typically offered Fall Spring Summer.

### **AD 44800 - Visual Communication Design III**

**Prerequisite(s):** AD 32900 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A course designed to introduce advanced design problems with emphasis on individual development and exploration of contemporary design issues. The study of surface design for packaging graphics will be introduced as well. Typically offered Fall Spring Summer.

### **AD 44900 - Visual Communication Design IV**

**Prerequisite(s):** AD 44800 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A course designed to introduce graphic problem solving in the commercial environment; advanced production techniques for the visual communication designer. Field trips may be required. Typically offered Fall Spring Summer.

### **AD 49100 - Special Topics In Art**

Credit Hours: 1.00 to 3.00. Topics will vary. Typically offered Fall Spring.

### **AD 59000 - Special Art Problems**

Credit Hours: 1.00 to 6.00. Individual problems in art history, appreciation, design, crafts, drawing, and painting. Credit dependent upon amount of work done. Permission of instructor required. Typically offered Fall Spring.

## **Astronomy**

### **ASTR 26300 - Descriptive Astronomy: The Solar System**

Credit Hours: 3.00. A descriptive course in astronomy intended for non-physics majors. Topics include: description of the sky; historical development of astronomy; motion of the sun and the moon; solar and lunar eclipses; the seasons and the calendar; the sun and the planetary system; comets, meteoroids, and asteroids. (Not available to students with credit in ASTR 36300.) Typically offered Fall.

### **ASTR 26400 - Descriptive Astronomy: Stars And Galaxies**

Credit Hours: 3.00. A descriptive course in astronomy intended for non-physics majors. Topics include: properties of stars; stellar birth and death; the Hertzsprung-Russell diagram; main sequence stars; binary systems; stellar clusters; red giants and white dwarfs, nova and supernova; neutron stars and black holes; galaxies and the cosmological red shift. Typically offered Spring.

### **ASTR 26500 - Descriptive Astronomy: Astronomical Origins**

Credit Hours: 3.00. This course is largely non-mathematical course in astronomy intended for non-science majors. Topics will include ancient ideas about the origin of the Universe, cosmology, formation of Solar Systems, and the formation and evolution of life elsewhere in the Universe. Typically offered Summer Fall Spring.

### **ASTR 36300 - The Solar System**

**Prerequisite(s):** MA 16400 FOR LEVEL UG WITH MIN. GRADE OF D- OR PHYS 15200 FOR LEVEL UG WITH MIN. GRADE OF D- OR PHYS 22000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is intended for students in science or engineering. The components of the course consist of an overview of solar system objects and an overview of the physical processes that control the evolution of solar system objects since formation. The overview of solar system includes observations of the Sun, planets, asteroids and Kuiper-belt objects, comets, and interplanetary dust. Specific processes that are discussed include hydrostatic equilibrium, orbital dynamics, radioactive decay, and heat flow. The role of these processes in shaping planetary surfaces and atmosphere is explored. Typically offered Fall.

### **ASTR 36400 - Stars And Galaxies**

**Prerequisite(s):** MA 16400 FOR LEVEL UG WITH MIN. GRADE OF D OR PHYS 15200 FOR LEVEL UG WITH MIN. GRADE OF D OR PHYS 22000 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. This course is intended for students in Science or Engineering. This is the second of a two-semester introductory sequence on astronomy and astrophysics, although it is designed to be a standalone course. It is intended mainly for Science and Engineering majors who are comfortable with calculus-based contents. The course provides an overview on the formation and evolution of stars, galaxies, and clusters of galaxies. Selected topics that are covered in more detail include stellar structure and atmosphere, properties of black holes, neutron stars, and white dwarfs, galactic dynamics, and dark matter in galaxies and clusters of galaxies. Typically offered Spring.

## **Behavioral Sciences**

### **BHS 10300 - Freshman Experience In Behavioral Sciences**

Credit Hours: 1.00. This interdisciplinary course provides entering first-year students and transfer students with less than 60 credits an opportunity to become familiar with campus resources, academic life management, and discipline specific career exploration. Typically offered Summer Fall Spring.

### **BHS 20100 - Statistical Methods For The Behavioral Sciences**

Credit Hours: 3.00. An introduction to descriptive and inferential statistics as applied to the behavioral sciences. Not open to students with credit in PSY 50000. Typically offered Fall Spring Summer.

### **BHS 20600 - Infant And Toddler Supervised Experience**

**Prerequisite(s):** BHS 22800 FOR LEVEL UG WITH MIN. GRADE OF D- AND CDFS 21000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Directed in service teaching for infant and toddler settings. Course will focus on all aspects of planning and guidance of infants and toddlers, addressing overall curriculum, development and observational assessment. Typically offered Fall Spring Summer.

### **BHS 29000 - Topics In Behavioral Sciences**

Credit Hours: 1.00 to 3.00. Variable credit, variable title course for group or individual study. Typically offered Fall Spring Summer.

### **BHS 48600 - Seminar In Human Development And Disability**

Credit Hours: 3.00. (PSY 48600) The Seminar On Human Development and Disability will expose students multiple perspectives related to the issues in human development and disability related issues. The purpose of the course is to provide an interdisciplinary experience for students preparing for work in the human services specifically with individuals with disability. Students will participate in a seminar originating at the Riley Child Development Center at the Indiana University School of Medicine. Students will participate in seminar presentations provided by pediatricians, psychologists, psychiatrists, social workers, special educators, and occupational therapists. Students will also gain experience in critiquing disability related research in the context of guided class discussions. Typically offered Summer Fall Spring.

### **BHS 49000 - Undergraduate Special Topics**

Credit Hours: 0.00 to 6.00. Individual or group participation in supervised reading, laboratory experiences, field experiences, or research in special areas in Human Development and Family Studies. Typically offered Fall Spring Summer.

## **Biochemistry**

### **BCHM 56100 - General Biochemistry I**

**Prerequisite(s):** (CHM 25600 FOR LEVEL UG WITH MIN. GRADE OF D- OR CHM 26200 FOR LEVEL UG WITH MIN. GRADE OF D-)



Credit Hours: 3.00. This course provides upper-division undergraduate and graduate students with basic understanding of biochemical and structural properties of amino acids, nucleic acids, lipids, and carbohydrates. This course allows students to connect the relationship between structure and function of biomolecules. In addition, students learn to understand enzyme properties, enzyme mechanism of action, and enzyme regulation. Typically offered Fall.

### **BCHM 56200 - General Biochemistry II**

Credit Hours: 3.00. This course provides upper-division undergraduate and graduate students with an understanding of core metabolic pathways. Anabolic and catabolic processes of metabolic pathways are studied. Biochemical and structural knowledge is used to determine how enzymes and coenzymes are needed to regulate and control metabolic pathways. Typically offered Spring.

## **Biological Sciences**

### **BIOL 10008 - Foundation Of Biology**

Credit Hours: 3.00. An introduction to core concepts in biology and basic laboratory skills used in the biological sciences. Typically offered Fall Spring Summer.

### **BIOL 10100 - Introductory Biology**

**Prerequisite(s):** MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 4.00. Introduction to life sciences for science majors. Molecular and cellular biology, basic chemistry, cell structure and physiology, cell division, genetics and development. Laboratories include illustration of basic concepts with emphasis on data collection and interpretation. Typically offered Fall Spring Summer.

### **BIOL 10200 - Introductory Biology**

**Prerequisite(s):** MA 15300 FOR LEVEL UG WITH MIN. GRADE OF D OR BIOL 10100 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 4.00. Continuation of BIOL 10100. Biology of organisms and populations. Morphology, physiology, and systematics of organisms, evolution, ecology and behavioral biology. Laboratories include survey of representative taxa. Typically offered Fall Spring Summer.

### **BIOL 10700 - Freshman Experience In Biological Sciences**

Credit Hours: 1.00. This course consists of lectures by faculty and guest speakers, presentations by students, and class discussions. Students in this course will become familiarized with the diverse fields of biological sciences, and gain knowledge and skills for literature search, critical thinking, problem solving, and oral and written communications. Typically offered Fall Spring.

### **BIOL 11000 - Fundamentals Of Biology I**

Credit Hours: 4.00. This course is designed primarily to provide an introduction to the principles of biology for students in agriculture and health sciences. Principles of biology, focusing on diversity, ecology, evolution, and the development, structure, and function of organisms. Typically offered Summer Fall Spring.

### **BIOL 11100 - Fundamentals Of Biology II**

Credit Hours: 4.00. This course is designed primarily to provide an introduction to the principles of biology for students in agriculture and health sciences. Continuation of BIOL 11000. Principles of biology, focusing on cell structure and function, molecular biology, and genetics. Typically offered Fall Spring.

### **BIOL 11400 - Freshman Experience**

Credit Hours: 1.00. This is a resource seminar required for all incoming biology majors. It is intended to ease a freshman biology major's entry into the Biological Sciences and Chemistry Section at PU/NC and, in general, the Purdue University system. It introduces the student to some fundamental details such as how to study, time management, academic success strategies, general policies and procedures of the University, and the many resources available at the North Central campus. In addition, it is designed to facilitate a student's learning experience in BIOL 12100, which is the first of four core biology lecture courses required of all biology majors. This course is also open to students majoring in disciplines other than biology which also require BIOL 12100 at PU/NC. Typically offered Fall.

### **BIOL 11600 - Laboratory In Biology I: Diversity, Evolution, Behavior And Genetics**

Credit Hours: 1.00. Laboratory exercises covering the diversity of organisms on earth, evolutionary mechanisms, ecology, behavior, and genetics. Typically offered Fall.

### **BIOL 11800 - Laboratory In Biology II: Development, Structure And Physiology**

Credit Hours: 1.00. Descriptive and experimental aspects of early plant and animal development, gross anatomy, histology, and physiology of selected plant and animal systems. Typically offered Spring.

### **BIOL 12100 - Biology I: Diversity, Ecology, And Behavior**

**Prerequisite(s):** CHM 11100 FOR LEVEL UG WITH MIN. GRADE OF D (MAY BE TAKEN CONCURRENTLY) OR CHM 11500 FOR LEVEL UG WITH MIN. GRADE OF D (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 2.00. Creates a framework for ordering biology by examining the unity and diversity of life on earth with an emphasis on ecology, genetics, population biology, evolution, and behavior. Typically offered Fall.

### **BIOL 12200 - Laboratory In Biology I: Diversity, Ecology, And Behavior**

Credit Hours: 2.00. Laboratory exercises focusing on the diversity of organisms on earth, the evolutionary mechanisms by which they arose; their ecology, behavior, and genetics. Typically offered Fall.

### **BIOL 12800 - The Biology Behind Modern Medicine**

Credit Hours: 3.00. An introduction to the structure and function of the human body with an emphasis on understanding the biological basis of modern medicine. This course may not be used to fulfill requirements for majors in the School of Science, Health Professions, or for admission to Nursing. Each topic covered will include a brief survey of the structure and function of that system, typical problems or diseases of that system, and medical treatments are based on this knowledge. Topics covered include cellular and tissue disorders development and genetic disorders, bone and joint disorders, neuromuscular disorders, neurological/brain injuries and stroke, cardiovascular problems, renal dysfunction, respiratory problems, and digestive system malfunctions. Laboratory exercises emphasize normal functions and tests for each topic or system area. Typically offered Spring.

### **BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms**

**Prerequisite(s):** (BIOL 12200 FOR LEVEL UG WITH MIN. GRADE OF D AND BIOL 12100 FOR LEVEL UG WITH MIN. GRADE OF D) OR BIOL 11600 FOR LEVEL UG WITH MIN. GRADE OF D (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. Principles of development of plants and animals and the relationship between the structure and function of selected systems of these organisms. Typically offered Spring.

### **BIOL 13200 - Laboratory In Biology II: Development, Structure, And Function Of Organisms**

Credit Hours: 2.00. Descriptive and experimental aspects of early plant and animal development, gross anatomy, histology, and physiology of selected plant and animal systems. Typically offered Spring.

### **BIOL 14300 - Current Topics In Modern Biology**

**Prerequisite(s):** MA 11100 FOR LEVEL UG WITH MIN. GRADE OF C OR MA 11500 FOR LEVEL UG WITH MIN. GRADE OF C OR MA 11500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 4.00. A one semester biology course tailored for the General Education Natural Science Section that addresses modern biology topics including an overview of the scientific method, biochemical molecules, cell structure and function, anatomy and physiology of animals and plants, genetics, evolution, and ecology. Field trips and laboratory assignments will provide experience with selected biological principles and practices. Typically offered Fall Spring Summer.

### **BIOL 14500 - Introduction To The Biology Laboratory**

Credit Hours: 2.00. An exposure to authentic research designed to teach students about laboratory science, while developing necessary skills and concepts to be successful as a biology major. A series of skills and knowledge building exercises will be followed by a transition into independent research projects that culminate in a public presentation of the data in a poster session. Critical thinking in experimental design as well as interpretation and communication of data will be stressed. Typically offered Fall Spring Summer.

### **BIOL 17500 - Flora Of Calumet Region**

Credit Hours: 3.00. Identification and recognition of the flora of the Calumet Region. The emphasis is on field that acquaints the student with the principle plant groups and species of the local flora. The course may not be used to fulfill the general science requirement. Typically offered Fall Spring Summer.

### **BIOL 20500 - Biology For Elementary School Teachers**

Credit Hours: 3.00. Unifying concepts of biology taught with materials appropriate for future elementary school teachers. Does not satisfy requirements for College of Science Majors. Not available for credit toward graduation for majors in the Department of Biological Sciences. Typically offered Fall.

### **BIOL 20600 - Biology For Elementary School Teachers**

**Prerequisite(s):** BIOL 20500 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Continuation of BIOL 20500. Does not satisfy requirements for College of Science Majors. Not available for credit toward graduation for majors in the Department of Biological Sciences. Typically offered Spring.

### **BIOL 21000 - Field Biology**

Credit Hours: 3.00. This course is offered for non-biology majors. It consists of a weeklong workshop at an off-campus field site. Activities will include field identification of animals and plants, a series of lectures by the course instructor and local experts, trips to local natural areas, and class discussions at the workshop site. Topics may include, but are not limited to, basic ecological and evolutionary principles, environmental ethics, local geology and ecology, natural resource management, habitat restoration and conservation, land use, and human impacts on the environment. It is expected that students will acquire a minimal degree of environmental literacy, including and understanding of some of

the most fundamental ecological principles, and an appreciation of human connectedness to other living species and the non-living environment. This course cannot be counted toward Bachelor of Science degree in Biology. Typically offered Summer.

### **BIOL 21201 - Medical Terminology**

Credit Hours: 3.00. Medical terminology covers the medical language and terminology used by health care professionals. Medical terms, abbreviations and definitions will be covered with associated anatomy. Students will acquire a basic medical terminology vocabulary. This knowledge will allow students to communicate effectively in a health care setting. Typically offered Fall Spring Summer.

### **BIOL 21300 - Human Anatomy And Physiology I**

**Prerequisite(s):** CHM 11100 FOR LEVEL UG WITH MIN. GRADE OF C- OR CHM 11900 FOR LEVEL UG WITH MIN. GRADE OF C- OR CHM 11500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 4.00. An introduction to human anatomy and physiology. Topics include: the basic structural and functional organization of the human body, cellular anatomy and physiology, body tissues, the integument, and the skeletal, muscular and nervous systems. Lecture material is reinforced and expanded upon in laboratory studies of gross anatomy, histology and physiology. Typically offered Fall Spring.

### **BIOL 21400 - Human Anatomy And Physiology II**

**Prerequisite(s):** BIOL 21300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 4.00. A continuation of BIOL 21300. Topics include: structure and function of the special senses and the endocrine, cardiovascular, lymphatic, immune, respiratory, digestive, urinary and reproductive systems; basic hematology, fluid and electrolyte balance and acid-base balance. Lecture material is reinforced and expanded upon in laboratory studies of gross anatomy, histology, and physiology. Typically offered Fall Spring.

### **BIOL 22100 - Introduction To Microbiology**

**Prerequisite(s):** (BIOL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- OR BIOL 21300 FOR LEVEL UG WITH MIN. GRADE OF D-) AND (CHM 11900 FOR LEVEL UG WITH MIN. GRADE OF D- OR CHM 11600 FOR LEVEL UG WITH MIN. GRADE OF D-)

Credit Hours: 4.00. The isolation, growth, structure, function, heredity, identification, classification, and ecology of microorganisms; their role in nature; and significance to man. Not available for credit toward graduation for majors in the Department of Biological Sciences. Typically offered Fall Spring. CTL: Microbiology for the Health Sciences

### **BIOL 22200 - Aids Online International**

Credit Hours: 3.00. This is a general education, online course that uses a multidisciplinary approach to provide students with a basic, yet comprehensive overview of HIV/AIDS, along with the impact of this disease on community and global health. The course uniquely integrates the biology of HIV/AIDS (40% of course content) with its origin, spread, history, transmission, prevention, and treatment (60% of course content). Typically offered Summer Fall Spring.

### **BIOL 22300 - Anatomy And Physiology Practicum I**

Credit Hours: 1.00. This course is designed for students transferring to PU/NC with credit for BIOL 20300. It will give the student the additional anatomy and physiology background and the one additional credit hour required for BIOL 21300 at the North Central campus. Typically offered Fall.

### **BIOL 22400 - Anatomy And Physiology Practicum II**

Credit Hours: 1.00. This course is designed for students transferring to PU/NC with credit for BIOL 20400. It will give the student the additional anatomy and physiology background and the one additional credit hour required for BIOL 21400 at the North Central campus. Typically offered Spring.

### **BIOL 22700 - Fundamentals Of Human Pathology**

**Prerequisite(s):** BIOL 21400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An introduction to human pathology with an emphasis on anatomical and physiological changes related to major disease processes of the body. Typically offered Fall.

### **BIOL 23100 - Biology III: Cell Structure And Function**

**Prerequisite(s):** CHM 25500 FOR LEVEL UG WITH MIN. GRADE OF D (MAY BE TAKEN CONCURRENTLY) AND BIOL 13100 FOR LEVEL UG WITH MIN. GRADE OF D AND BIOL 23200 FOR LEVEL UG WITH MIN. GRADE OF D (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. An introduction to modern cell biology through an examination of the physical and chemical properties that lead to an understanding of the molecular basis for cell function. Typically offered Fall.

### **BIOL 23200 - Laboratory In Biology III: Cell Structure And Function**

Credit Hours: 2.00. Laboratory exercises designed to illustrate the properties, functions, and growth of prokaryotic and eukaryotic cells and to introduce the student to modern experimental methods used to study cells and their separated components. Typically offered Fall.

**BIOL 23800 - Biology In Society I**

Credit Hours: 3.00. Does not satisfy requirement for School of Science majors. An introduction to the basic and underlying principles of modern biology and the relevance of these principles to human life. This includes an understanding of principles affecting living organisms, human biology, and the environment. Typically offered Summer Fall Spring.

**BIOL 23900 - Biology In Society II**

Credit Hours: 3.00. Does not satisfy requirement for School of Science majors. A continuation of the first semester. An introduction to the basic and underlying principles of modern biology and the relevance of these principles to human life. This includes an understanding of principles affecting living organisms, human biology, and the environment. Typically offered Summer Fall Spring.

**BIOL 24100 - Biology IV: Genetics And Molecular Biology**

**Prerequisite(s):** BIOL 23100 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 23200 FOR LEVEL UG WITH MIN. GRADE OF D- AND (CHM 25600 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) AND CHM 25601 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) AND BIOL 24200 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) )

Credit Hours: 3.00. An introduction to the principles of classical genetics and to molecular genetics. Topics covered are transmission of the genetic material (both in eukaryotes and prokaryotes); changes in the genetic material, structure, and function of the genetic material; and the manipulation of genetic material (recombinant DNA technology). Typically offered Spring.

**BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology**

**Prerequisite(s):** BIOL 24100 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 2.00. Experiments in classical and modern genetics and exercises to acquaint the students with basic techniques in molecular biology. Typically offered Spring.

**BIOL 24300 - Introductory Cell Biology**

**Prerequisite(s):** BIOL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHM 11600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. Lecture emphasizes the unity of cellular processes among all living organisms. Topics covered include: molecular mechanisms regulating cellular activities involved in ion and solute transport; organelle biogenesis; protein trafficking and vesicular transport; structure and function of cell cytoskeleton; cell signaling, cycle and cycle control; and cancer biology. The laboratory complements lecture with experiments that incorporate procedures and techniques used in research, medical, biotechnology, and pharmaceutical laboratories. Typically offered Fall Spring.

**BIOL 24400 - Genetics**

**Prerequisite(s):** BIOL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHM 11600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. The course has lectures and laboratory exercises. Lecture concentrates on the study of genes and genomes with emphasis on data analysis and problem solving; topics include patterns of inheritance, the relationship of DNA and phenotype, genome structure and engineering, the nature of heritable changes, and genes in population. The laboratory includes experiments in microbial, plant, and animal (including human) genetics, emphasizing molecular approaches. Lab exercises include molecular cloning and DNA manipulation. Typically offered Fall Spring Summer.

**BIOL 28600 - Introduction To Ecology And Evolution**

**Prerequisite(s):** BIOL 11000 FOR LEVEL UG WITH MIN. GRADE OF D- OR BIOL 12100 FOR LEVEL UG WITH MIN. GRADE OF D- OR BIOL 14300 FOR LEVEL UG WITH MIN. GRADE OF D- OR BIOL 20600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 2.00. Evolutionary processes and ecological principles associated with individuals, populations, communities, and ecosystems. Topics include genetic drift, natural selection, adaptation, life tables, population dynamics, competition, predation, biodiversity, and ecological stability, with emphasis on natural systems. Typically offered Spring.

**BIOL 28800 - Introductory Field Ecology**

Credit Hours: 2.00. This laboratory course is designed to provide non-biology majors with a field experience in ecology. Topics may include, but are not limited to: field identification of animals and plants, basic ecological and evolutionary principles, environmental ethics, local geology and ecology, natural resource management, habitat restoration and conservation, land use, and human impacts on the environment. This course cannot be counted toward a Bachelor of Science degree in Biology. Typically offered Summer Fall Spring.

**BIOL 29300 - Sophomore Seminar: Planning Your Future In Biology**

Credit Hours: 1.00. Biology 29300 is a one-credit course designed for sophomores in the Department of Biological Sciences. This course will help students maximize the remainder of their undergraduate career. The course will cover biology career information and suggestions for professional development. Students will learn about the various disciplines that make up modern Biological Sciences. Students will learn about opportunities in undergraduate research and tour a research laboratory. In-depth presentations from biology alumni from a variety of fields are featured. Assignments include a Plan of Study, a resume, and a written paper evaluating the career path of one alumni speaker and describing the student's response to the presentation. Typically offered Spring.

### **BIOL 29500 - Special Assignments**

Arrange Hours and Credit. Reading, discussions, written reports, or laboratory work selected for enrichment in special areas of the biological sciences. Permission of instructor required. Typically offered Fall Spring Summer.

### **BIOL 30300 - Birds Of Northwest Indiana**

Credit Hours: 3.00. This course provides an introduction to the structure, function, ecology, behavior, conservation, and classification of birds. It includes both field and laboratory aspects, and will provide a working knowledge of birds native to Northwest Indiana. This hands-on course is designed for non-scientists, teachers, and bird enthusiasts in general. No advanced training is required for this course. Typically offered Summer.

### **BIOL 30600 - The Biology And Controversy Of Medical Ethics**

Credit Hours: 3.00. This course provides a detailed introduction to the field of medical ethics, where the class will explore ethical issues in health care, the role of modern technology in medical ethics, moral responsibility and basic biology behind issues of health, disease, life and death. This course includes a service learning component, where the student will explore current ethical issues in community-based health care environments. This course is designed for science and non-science students. Typically offered Summer Fall Spring.

### **BIOL 30700 - Plant Physiology**

**Prerequisite(s):** BIOL 10100 FOR LEVEL UG WITH MIN. GRADE OF C- AND BIOL 10200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This is an intermediate-level course in plant biology. Understanding of basic concepts in biology is required. Topics may include but are not limited to plant cells, genome, gene expression, water transport, solute translocation, photosynthesis, carbohydrate, lipid and protein metabolisms, nutrient assimilation, plant growth, hormones, flowering and defense. Applications to agriculture, biotechnology, ecology, forestry and other related areas will also be included. Typically offered Fall Spring Summer.

### **BIOL 30800 - Introduction To Biotechnology**

**Prerequisite(s):** BIOL 24400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Introduction to recent advances in biotechnology: the use of living organisms to create products, applications, or processes that improve the quality of life for humans and other species. The course will consist of an overview of medical, microbial, agricultural, aquatic, bioremediation, and forensic biotechnology with a focus on modern applications that impact our everyday lives. Typically offered Spring.

### **BIOL 31000 - Form And Function Of Vascular Plants**

**Prerequisite(s):** BIOL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 10200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. An examination of external and internal characteristics of vascular plants and how these functional attributes impact their survival. Investigations of morphological traits and physiological mechanisms in the context of reproduction, photosynthesis, mechanical support, and mineral uptake and transport. Laboratory sessions include various aspects of plant form and function relationships associated with adaptations to environmental conditions. Typically offered Fall Spring Summer.

### **BIOL 31100 - Introduction To Evolution**

Credit Hours: 3.00. A study of evolution as a basic concept of the biological sciences; an examination of current scientific methods of experimentation within the area, as well as evidences for, and possible mechanisms of, evolutionary change.. Typically offered Fall Spring.

### **BIOL 31600 - Basic Microbiology**

**Prerequisite(s):** BIOL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHM 11500 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHM 11600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. A study of microbial structures, metabolism, genetics, classification, growth and control of growth, the role and significance of microbes to humans and the environment. Bacteria, fungi, protozoa and viruses are covered. Emphasis is on the bacteria. Typically offered Fall Spring Summer.

### **BIOL 32020 - Biology Of The Immune System**

**Prerequisite(s):** BIOL 11100 FOR LEVEL UG WITH MIN. GRADE OF D- OR BIOL 13100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Exposes students to the basic principles of immunology; teaches them to use those principles to understand the cause of immunological disease, and the basis of vaccines and immunotherapy; and, provides them with sufficient information to understand the principles and challenges of gene therapy, and the application of genomics to future drug development. Typically offered Fall Spring Summer.

### **BIOL 32200 - Microbiology**

Credit Hours: 3.00. An examination of the microbial world -acellular and cellular. Classification, structure, function, growth, isolation, ecology, immunology, their role in nature, and their impact on human health.. Typically offered Fall Spring.

### **BIOL 32300 - Microbiology Laboratory**

Credit Hours: 2.00. An introduction to microbiological applications - identification, isolation, and growth of microorganisms, including modern methods for identifying pathogen microbes.. Typically offered Fall Spring.

### **BIOL 32400 - Natural History of the Smoky Mountains**

Credit Hours: 3.00. Learn about air quality, fire management practices, the reintroduction of native species and the elimination of exotic ones. You'll have the opportunity to conduct a wildlife census, and assist park personnel with a resource management project such as reestablishing a native meadow or ridding a stream of invasive milfoil. Special courses on trees, salamanders, stream ecology, and geology round out the week. This week of in-depth study and first-hand field experience is perfect for classroom teachers, naturalists or anyone interested in learning more about the natural world. A pre-trip and post-trip session at Purdue University Northwest is required. Typically offered Summer.

### **BIOL 32500 - Natural History of North West Indiana**

Credit Hours: 3.00. This course consisting of field trips and lectures will discuss many aspects of ecosystems of the region. Some of the topics to be covered include geological history, glaciation, human settlement and impact, the Dunes and other ecosystems, amphibians, reptiles, mammals, birds, insects, plants and conservation issues. This course fulfills the requirement for a non-lab science elective for non-science majors and is ideal for anyone interested in the ecology of Northwest Indiana.. Typically offered Summer.

### **BIOL 33000 - Biostatistics**

**Prerequisite(s):** BIOL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- OR BIOL 10200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Biological applications of statistical principles and procedures. Topics include basic concepts of statistics and probability, sampling and experimental design, data collection, and various analytical methods to analyze the data collected. Typically offered Fall Spring Summer.

### **BIOL 33300 - Ecology**

**Prerequisite(s):** BIOL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 10200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. Adaptations of living organisms to environment; natural selection and evolution of species; ecological interactions at organism, population and community levels; dynamics of populations and communities; ecosystem structures and functions; and human impacts on ecosystems. Typically offered Fall Spring.

### **BIOL 33900 - Social Issues In Biology**

**Prerequisite(s):** BIOL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 10200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is required for biological science teaching majors only. Contemporary social issues in biology will be discussed in this course. Topics may include, but not limited to, religious conflicts of evolution, ethics of biological research and practice, and issues of human nutrition, substance abuse, sex education, and family planning. Cannot be counted for biology elective credits. Typically offered Fall Spring.

### **BIOL 34000 - Human Physiology**

**Prerequisite(s):** BIOL 21300 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 21400 FOR LEVEL UG WITH MIN. GRADE OF D- OR BIOL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 10200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 5.00. A study of human physiology for students entering health oriented fields. The following systems will be examined: nervous, muscular, circulatory, respiratory, urinary, digestive, and endocrine. Emphasis on the relationship of function to structure at various levels of organization. Attention will be drawn to homeostatic mechanisms and intersystem interactions. Typically offered Fall Spring Summer.

### **BIOL 34200 - Biological Science Practicum**

**Prerequisite(s):** BIOL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 24300 FOR LEVEL UG WITH MIN. GRADE OF D- OR BIOL 24400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 0.00 to 3.00. Students will do on-or-off-campus practicum in their field of interest. Can be repeated to satisfy the experiential learning requirement. This course will not be counted toward the biological sciences elective credits. Typically offered Fall Spring Summer.

### **BIOL 35700 - Introductory Animal Physiology**

**Prerequisite(s):** BIOL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 10200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. A system analysis of animal physiology. With emphasis on mammals, the operation of systems such as respiratory, cardiovascular, neuromuscular, and endocrine will be considered. Interactions between components of individual systems as well as intersystem interaction is discussed. Typically offered Fall Spring Summer.

### **BIOL 38500 - Introduction To Ecology**

Credit Hours: 3.00. An introduction to ecological processes and the dynamics of communities and populations of ecosystems. Biological, physical, and behavioral adaptations and interactions affecting ecosystem change or stability, including competition, predation, mutualism, and parasitism. Typically offered Summer Fall.

### **BIOL 39300 - Preparing For Your Future In Biology**

Credit Hours: 1.00. Biology 39300 is a one-credit course for junior and seniors in the Department of Biological Sciences. This course will help students begin to prepare for life after Purdue. Students will learn about interviewing, job searching, graduate and professional school searching, resumes, industrial practices, and how to evaluate job/school offers. Construct a polished image on top of your solid biology foundation! Get the job or get admitted to the school you want. Typically offered Spring.

### **BIOL 39500 - Special Assignments**

Arrange Hours and Credit. Reading, discussions, written reports, seminar presentations, and field or laboratory work provided for enrichment in special areas of the biological sciences. Permission of instructor required. Typically offered Fall Spring Summer.

### **BIOL 40200 - Biogeography**

**Prerequisite(s):** BIOL 28600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course will provide students with a broad perspective of world-wide distribution of organisms over space and time. Students will discuss observed distribution patterns of select species, genera, families, and other groups. Biogeography is a highly integrative science that draws on information from many fields including ecology, taxonomy, geological history, and evolutionary biology. Typically offered Fall Spring Summer.

### **BIOL 40400 - Human Gross Anatomy**

Credit Hours: 5.00. An in-depth examination of human gross anatomy. The details of human anatomy are revealed by the dissection of a cadaver under the close supervision of the instructor. Students in this course are also required to be undergraduate teaching assistants in BIOL 21300. This course is recommended for biology majors in the pre-professional curricula. Typically offered Fall.

### **BIOL 40500 - Conservation Biology**

**Prerequisite(s):** BIOL 33300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Modern principles of biological conservation. Evaluation and conservation of biological species and their habitats. Role of human activities in species and habitat conservation. Typically offered Fall Spring.

### **BIOL 40700 - Capstone Experience**

**Prerequisite(s):** BIOL 24100 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 24200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 1.00. This is a synthesis course which is designed to allow a student the opportunity to utilize all his/her biological experience and general education skills (represent views clearly and cogently, analyze, think critically, and formulate reasoned conclusions) to solve real world problems within the areas of the biological sciences. This course is also used by the faculty to assess and improve the curricular components of the biology degree program. Permission of Instructor required. Typically offered Spring.

### **BIOL 40800 - Laboratory In Biotechnology**

Credit Hours: 3.00. This course emphasizes modern laboratory techniques of biochemical and molecular analysis of biological systems. Students are exposed to a wide variety of experimental and analytical techniques, their theory, and their application to biological problems. Typically offered Fall Spring.

### **BIOL 41000 - Human Physiology**

Credit Hours: 4.00. Emphasis on homeostatic regulation of important human physiological systems including nervous, endocrine, cardiovascular, renal, respiratory and reproductive systems. Typically offered Spring Fall.

### **BIOL 41100 - Laboratory In Molecular Biology**

Credit Hours: 3.00. This course is divided into two major sections. In the first section, students will study topics dealing with protein biology and biochemistry such as enzyme action and isolation, molecular evolution, and the detection and molecular basis of human disease. Techniques that will be used for these experiments include electrophoresis (both native and SDS denatured), chromatography (affinity and gel filtration), peptide mapping analysis, and the Western blot procedure. In the second section of the course, students will perform experiments that deal with DNA structure and function. These experiments stress the organization and complexity of the prokaryotic and eukaryotic genomes, gene function and regulation, and the structure of the eukaryotic chromosome. Techniques that will be used in this section include restriction nuclease mapping, isolation of organelles, gene cloning, and Southern blot hybridization procedures. Typically offered Fall.

### **BIOL 41200 - Climate Change And The Environment**

**Prerequisite(s):** BIOL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 33300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The objective of this course is to provide an understanding of the patterns, drivers and consequences of climate change in terrestrial and aquatic ecosystems and the impacts on human society. Typically offered Fall Spring Summer.

### **BIOL 41300 - Aquatic Ecology**

**Prerequisite(s):** BIOL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 33300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is designed to provide students with the basic understanding of freshwater and marine aquatic environments with emphasis directed toward freshwater systems. The relationships between the chemical make-up of the system, the physical movements of the water, the geology of the sediments and the biology of the various systems will be examined. Typically offered Fall Spring Summer.

### **BIOL 41400 - Invasive Species Ecology**

**Prerequisite(s):** BIOL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 33300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is designed to provide students with an up-to-date perspective on invasive species. Part one will cover characteristics of invasive species and the ecological and evolutionary processes that occur when non-native species are introduced into new habitats. There will also be a review of past and present pathways that have led to the introduction and spread of invasives. Part two will cover invasive species control and management. Course literature will be a mix of recent peer-reviewed articles, reports and landmark papers. Typically offered Fall Spring Summer.

### **BIOL 41500 - Introduction To Molecular Biology**

Credit Hours: 3.00. An introduction to modern molecular biology techniques and how they are used to address current topics in gene regulation. Emphasis will be placed on experimental procedures and model systems, such as site-directed mutagenesis of isolated genes and their subsequent introduction into prokaryotic and eukaryotic cells. Topics will address the molecular control mechanisms associated with DNA replication, RNA transcription, RNA processing, and differential gene expression. Typically offered Fall.

### **BIOL 41700 - Laboratory In Biotechnology**

Credit Hours: 3.00. An introduction to the laboratory techniques commonly used in the study of both nucleic acids and proteins. This course is intended to expose students to the theory and application of a wide variety of techniques ranging from DNA cloning and analysis to protein expression and characterization. Typically offered Spring.

### **BIOL 41800 - Drugs And Disease**

**Prerequisite(s):** BIOL 24300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course provides students the opportunity to learn about common diseases in the United States and the current drugs utilized to treat various disease states. The students will have the opportunity to apply what they have learned about cells and targets to the design and targeting for specific drugs and the mechanism of action. Typically offered Fall Spring.

### **BIOL 41900 - Experimental Design**

Credit Hours: 3.00. Experience research projects from conception to completion. Students will tackle biological questions by generating individual hypothesis, designing experiments, and interpreting their results. Students will utilize modern molecular techniques and equipment to design and perform individualized experiments. Typically offered Fall.

### **BIOL 42200 - Comparative Vertebrate Anatomy**



Credit Hours: 4.00. A comparative anatomy course focused on the anatomy and evolution of the vertebrate body plan. Students will develop an understanding of the evolutionary origin of many morphological characteristics of their own bodies through a comparative dissection approach. Prerequisite: Evolution course or permission of instructor. Typically offered Fall Spring Summer.

### **BIOL 42300 - Physical Principles Of Biological Chemistry**

Credit Hours: 3.00. Introduction to inorganic chemistry of cellular activity including the biochemical functions of common and trace metals in cell function. Topics include: principles of coordination chemistry, its effects on ionic complexes with functional groups of proteins and nucleic acids, reactivity of metal ion complexes, and reaction mechanisms of specific metalloenzymes. Typically offered Fall Spring.

### **BIOL 42600 - Senior Capstone**

**Prerequisite(s):** BIOL 31600 FOR LEVEL UG WITH MIN. GRADE OF D- OR BIOL 33300 FOR LEVEL UG WITH MIN. GRADE OF D- OR BIOL 35700 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 1.00. Students will meet two hours a week to discuss current issues in biology and give presentations. This course will integrate material learned in previous biology courses to round out the academic experience of graduating seniors and provide a final opportunity for the department to assess student achievement. Typically offered Summer Fall Spring.

### **BIOL 42800 - Biology Seminar**

Credit Hours: 1.00. Guest speakers, faculty and students will present current topics in biology. Typically offered Fall Spring.

### **BIOL 43100 - Geobiology And Evolution**

Credit Hours: 3.00. Environmental and climatic changes have continued throughout earth's history. This course will examine the physiological, evolutionary, and ecological adaptations of representative organisms existing in geological time divisions and the effects of biological organisms in shaping conditions on earth over time. Typically offered Summer Fall Spring.

### **BIOL 43300 - Introduction To Population Genetics**

Credit Hours: 3.00. An introductory and essential background in population genetics. By incorporating examples from many biological disciplines (human genetics, medical evolution, human evolution, and endangered species), it should make the theory of population genetics relevant to students in any field of biology. Topics will also include a review of mathematical modeling and probability theory, as well as modern molecular tools being applied in population genetic studies. Typically offered Fall Spring.

### **BIOL 44000 - Herpetology**

**Prerequisite(s):** BIOL 33300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The evolution, paleontology, taxonomy, morphology, physiology, ecology, and geographic distribution of amphibians and reptiles. Museum techniques, biosystematics, preservation, and caring for specimens are included. Field work emphasizes collection and identification of Indiana species. Typically offered Fall Spring Summer.

### **BIOL 44200 - Ecology Of Shallow Lakes**

**Prerequisite(s):** BIOL 28600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 5.00. This course will focus on the ecology of shallow lakes which are the most common lake type throughout much of the Midwest and the United States as a whole. The course will introduce the student to the ecology of shallow lakes with particular emphasis on how the abiotic features of lakes are important determinants of the structure of their biological communities. The dynamic nature of lakes will be stressed with a focus on seasonal changes in the chemical and physical characteristics that impact food web structure over time. Laboratories will focus on learning field techniques for sampling and identifying organisms from plankton to aquatic plants to fish. Typically offered Fall Spring Summer.

### **BIOL 44900 - Environmental Microbiology**

Credit Hours: 3.00. A survey of the various ways in which microbes interact with other organisms and their environment. The course will consider a diverse array of topics across a wide range of aquatic and terrestrial ecosystems - including biofilms, thermal vent communities, and other extreme habitats - with a coverage of both pathogenic and nonpathogenic microbes. Current issues in microbial diversity, biodegradation, and bioremediation will also be discussed. The laboratory activities are designed to give students hands-on experience with current problems in microbial ecology. Typically offered Summer Fall Spring.

### **BIOL 45500 - Animal Physiology**

Credit Hours: 3.00. Principles of physiology illustrated by invertebrate and vertebrate systems. Respiration, ion and water balance, temperature regulation, and nervous systems. Typically offered Spring.

### **BIOL 45600 - Laboratory In Animal Physiology**

Credit Hours: 1.00. Laboratory experiments are designed to illustrate the principles of systems physiology. The course emphasizes the basic principles of physiology, the laboratory methods to study these principles, and the quantitative analysis of data. Permission of instructor required. Typically offered Spring.

### **BIOL 46000 - Herpetology**

**Prerequisite(s):** (BIOL 11000 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 11100 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (BIOL 12100 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 13100 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (BIOL 20500 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 20600 FOR LEVEL UG WITH MIN. GRADE OF D-)

Credit Hours: 3.00. An introduction to the biology of the amphibians and reptiles, including discussion and study of the evolutionary history, ecology behavior, physiology, and distribution of amphibians and reptiles. Special attention will be given to the identification of amphibians and reptiles found in northern Indiana. Typically offered Fall Spring Summer.

### **BIOL 46100 - Animal Behavior**

**Prerequisite(s):** BIOL 28600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An exploration of how animals survive, adapt, and respond to environmental changes. Topics covered will include learning, mechanisms of animal behavior, foraging, anti-predatory behavior, aggression and other social behaviors, signaling, and communication. Examples from the Kingdom Animalia will include vertebrate, invertebrate and companion animals. Typically offered Fall Spring Summer.

### **BIOL 46200 - Evolution Of Human Mating Systems**

**Prerequisite(s):** BIOL 28600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An exploration of the morphological, physiological, behavioral, and genetic traits important to humans in mate choice. Topics covered will include signs used by males and females to choose mates, the importance of hormones mate choice, pheromonal communication systems and mate choice, and mate choice by gays and lesbians. Typically offered Fall Spring Summer.

### **BIOL 46600 - Developmental Biology**

Credit Hours: 3.00. The lectures and laboratories focus on what happens during the development of an organism and how we know what happens from experimental results. During the first half of the course, students spend time becoming familiar with the embryology of animals and plants by doing laboratory exercises in their lab manual. They also become adept working with chick embryos and Wisconsin Fast Plants because these are the two developing systems most students use to do their lab projects during the second half of the course. Typically offered Spring.

### **BIOL 47700 - Phycology**

**Prerequisite(s):** BIOL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 10200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The study of algae with emphasis on identification, morphology and ecology of fresh water species. Typically offered Fall Spring Summer.

### **BIOL 48300 - Great Issues: Environmental And Conservation Biology**

Credit Hours: 3.00. Concerned with the application of ecological principles to environmental issues, the course introduces fundamental ecology, emphasizing the interplay of theoretical models, natural history, and experimentation. New research developments are stressed, with the outlook for application to environmental management and restoration. Whole-biosphere issues, such as the loss of biological diversity, frame a focus at the population level to understand local and global extinction and community stability. In-depth case studies of endangered ecosystems (both temperate and tropical), with computer modeling, field trips, and discussions of policy formulation, demonstrate the range of tools and information necessary to accomplish coexistence of humans with the rest of nature. Typically offered Fall.

### **BIOL 48800 - Biological Sciences Internship**

Credit Hours: 1.00 to 3.00. Directed in-service training with on-or-off-campus employers that may include, but not be limited to, government agencies, private industry and community organizations. Can be repeated to satisfy the experiential learning requirement. Typically offered Fall Spring Summer.

### **BIOL 48900 - Biological Sciences Research**

Credit Hours: 1.00 to 12.00. Students will do research in the area of biological sciences with a primary investigator. They will contribute to ongoing research while learning current research techniques. They will analyze data and determine course of actions to be taken in their experiments. During this process the students will develop critical thinking, oral and written communication skills. Permission of instructor required. Typically offered Spring.

### **BIOL 49200 - Mycology**

Credit Hours: 4.00. This course provides a detailed introduction to the field of mycology, where the class will learn basics of mycology to include common contaminants as well as pathogenic fungi. This course is designed for science

students who will gain skills in laboratory identification of fungal and yeast elements. Typically offered Summer Fall Spring.

### **BIOL 49500 - Special Assignments**

**Prerequisite(s):** BIOL 10100 FOR LEVEL UG WITH MIN. GRADE OF C- OR BIOL 10200 FOR LEVEL UG WITH MIN. GRADE OF C-

Arrange Hours and Credit. Readings, discussions, written reports, seminar presentations, and field or laboratory work provided for enrichment in special areas of the biological sciences. Permission of instructor required. Typically offered Fall Spring Summer.

### **BIOL 49700 - Biology Honors Seminar**

Credit Hours: 1.00. Required of all students participating in honors research. Discussions and presentations of research, including seminars by those students who are completing their honors research thesis. Typically offered Spring.

### **BIOL 49900 - Biology Honors Thesis Research**

Credit Hours: 1.00 to 4.00. Research under the guidance of a scientist. Submission of honors tutorial petition and consent of faculty tutor and Honors Committee. Permission of department required. Typically offered Fall Spring Summer.

### **BIOL 50500 - Biology Of Invertebrate Animals**

Credit Hours: 3.00. A survey of the invertebrate animals, their morphology, physiology, ecology, and phylogeny. Typically offered Fall Spring Summer.

### **BIOL 50700 - Principles Of Molecular Biology**

**Prerequisite(s):** (BIOL 32000 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 32100 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (BIOL 42900 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 43000 FOR LEVEL UG WITH MIN. GRADE OF D-) OR CHM 53300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Molecular aspects of structure and function of nucleic acids and proteins, including recombinant DNA research. Prokaryotic and eukaryotic molecular biology are given equal weight. Typically offered Fall.

### **BIOL 50800 - Recombinant DNA Techniques**

**Prerequisite(s):** BIOL 24300 FOR LEVEL UG WITH MIN. GRADE OF D- OR BIOL 32000 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 24400 FOR LEVEL UG WITH MIN. GRADE OF D- OR BIOL 43000 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 24401 FOR LEVEL UG WITH MIN. GRADE OF D- OR BIOL 42900 FOR LEVEL UG WITH MIN. GRADE OF D- OR CHM 53300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Basic principles of genetic engineering; gene cloning with various vectors. Techniques include isolation of DNA, use of restriction endonucleases, separation of DNA fragments, transformation of E coli with recombinant DNA, detection of DNA sequences in Southern blot hybridization. Typically offered Spring.

### **BIOL 51300 - Functional Human Anatomy**

Credit Hours: 4.00. An advanced course in human anatomy and morphology, with an emphasis on analysis of human structure and correlations with biomechanical function. Each region of the body is considered in detail, morphologically analyzed, and portfolios developed. Surface features and the functional role of structures identified are related to normal and pathological conditions. Measurements of individuals are used in analysis and prediction of functional limitations. Typically offered Fall.

### **BIOL 51601 - Food Microbiology**

**Prerequisite(s):** BIOL 31600 FOR LEVEL UG WITH MIN. GRADE OF OR BIOL 22100 FOR LEVEL UG WITH MIN. GRADE OF

Credit Hours: 3.00 to 5.00. Food Microbiology is a dual level course for both graduate and upper level undergraduate students who are interested in learning food safety (foodborne diseases), food fermentation/production, spoilage, food preservation, and regulations. The laboratory teaches conventional as well as molecular methods for enumeration and detection of foodborne pathogens and food spoilage microbes in various types of food samples. Typically offered Fall Spring Summer.

### **BIOL 51605 - Environmental Microbiology**

**Prerequisite(s):** BIOL 31600 FOR LEVEL UG WITH MIN. GRADE OF OR BIOL 22100 FOR LEVEL UG WITH MIN. GRADE OF AND CHM 25600 FOR LEVEL UG WITH MIN. GRADE OF

Credit Hours: 3.00 to 4.00. This is a dual level course for both graduate and upper level undergraduate students who are interested in learning about the diversity and characteristics of microbes in the environment (water, soil, and air); their roles in the environment such as recycling important elements, remediation of organic and metal pollutants; and their impacts on industry, agriculture and human health. Topics such as pathogens in the environment, waste water and drinking water treatments, and bioterrorism are also discussed. Lab activities provide students hands-on experience with testing and analyzing environmental samples for microbial activities and contaminations. This course may be

offered as a 3 credit course with lecture only or as a 4 credit course with both lecture and lab component. In the semester when the course is offered as a 4 credit course, students will be required to take both lecture and lab. Typically offered Fall Spring Summer.

### **BIOL 51801 - Biology Ethical Frontiers**

Credit Hours: 3.00. Advances in technology have produced many drugs, devices and scientific manipulations that can intervene in and alter human life at various levels. Advances in technology have also affected ecosystems, with serious implications for humans and other organisms. Questions have been raised about the ethics of these interventions at all levels. This course will review the science behind biological issues with ethical implications, using textbook material and primary scientific literature. Students will integrate this information and use it to explore and analyze scientific data, they will then formulate and justify ethical viewpoints on topics discussed. This course is for upper level undergraduates and graduate students. Permission of instructor required. Typically offered Fall Spring Summer.

### **BIOL 52500 - Principles Of Neurobiology**

Credit Hours: 4.00. A survey of fundamental topics in the physiology of the nervous system including a discussion of excitable membranes, the physiology and pharmacology of electrical and chemical synapses, and the organization and function of vertebrate and invertebrate nervous systems. Typically offered Spring.

### **BIOL 52900 - Bacterial Physiology**

Credit Hours: 3.00. A detailed consideration of the central metabolic routes, their role in generation of energy and key intermediates, and the conversion of those intermediates to small molecule building blocks. Regulatory mechanisms will be stressed. Typically offered Fall.

### **BIOL 53100 - Parasitology**

**Prerequisite(s):** BIOL 13100 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 11800 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. Arthropod, protozoan, and helminth parasites, their morphology, life histories, host-parasite relationships, and control. Typically offered Fall.

### **BIOL 53300 - Medical Microbiology**

**Prerequisite(s):** (BIOL 22100 FOR LEVEL UG WITH MIN. GRADE OF C- OR BIOL 31600 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 3.00. Host-parasite relationships. Immunology. Bacteria and viruses associated with infectious diseases. Typically offered Fall.

### **BIOL 53400 - Laboratory In Medical Microbiology**

Credit Hours: 2.00. Properties of microorganisms associated with infectious diseases. Typically offered Spring.

### **BIOL 53700 - Immunobiology**

Credit Hours: 3.00. Readings and discussion in the structural, cellular, and genetic basis of the immune response. Biology 420 recommended as a pre-requisite. Typically offered Spring.

### **BIOL 54100 - Molecular Genetics Of Bacteria**

**Prerequisite(s):** BIOL 31600 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Advanced bacterial genetics, with emphasis on the use of genetics as a powerful and creative intellectual activity that enables us to discover biological functions and to construct new organisms by the manipulation of DNA. Major topics include: mutations, genetic selections, recombination, regulatory mechanisms, and genomic evolution. Typically offered Fall.

### **BIOL 54401 - Epigenetics**

Credit Hours: 3.00. Epigenetics is the study of chemical reactions and factors that influence cell phenotype. All cells in a multicellular organism have the same set of genetic instructions, however cells have different phenotypes and genetically identical twins are not completely identical. Developmental and environmental cues impact gene expression, understanding how this is done is the basis of epi-(above) genetics. Epigenetics has implications for development, developmental disorders, adult disorders, memory formation, etc. Permission of instructor required. Typically offered Fall Spring Summer.

### **BIOL 55700 - Physiology II**

Credit Hours: 3.00. A study of the human cardiovascular, pulmonary, blood, and gastrointestinal systems. Higher neuronal functions and intersystem interactions will be discussed. Typically offered Fall Spring Summer.

### **BIOL 56100 - Immunology**

**Prerequisite(s):** BIOL 22100 FOR LEVEL UG WITH MIN. GRADE OF C- OR BIOL 31600 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Introduction to the basic principles and experimentation in cellular and humoral immunology. Typically offered Spring.

**BIOL 56600 - Developmental Biology**

**Prerequisite(s):** BIOL 24400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00 (West Lafayette, Fort Wayne, IUPUI, North Central) 4.00 (Calumet) Principles of development with emphasis on concepts and experimental evidence for underlying mechanisms, including molecular, cellular, and supracellular approaches. Typically offered Spring.

**BIOL 56700 - Laboratory In Developmental Biology**

Credit Hours: 1.00. Descriptive and experimental study of the development of animals. Laboratories do not necessarily follow lecture material. Typically offered Spring.

**BIOL 58000 - Evolution**

Credit Hours: 3.00. A study of evolution as a basic concept of the biological sciences; an examination of current methods of experimentation within the area, as well as evidences for the possible mechanisms of evolutionary change. Typically offered Spring.

**BIOL 58200 - Ecotoxicology**

Credit Hours: 3.00. An investigation into the effects of environmental pollutants on ecosystem structure and function. The fate of pollutants in the environment is considered as it relates to the direct and indirect effects of chemicals on biota. Also considered are regulatory aspects of ecotoxicology. Typically offered Spring.

**BIOL 58500 - Ecology**

Credit Hours: 3.00. Ecological processes and dynamics of populations, communities, and ecosystems; physical, physiological, behavioral, and population genetic factors regulating population and community structure; case studies; field studies, and simulation models of life history attributes, competition, predation, parasitism, and mutualism. Typically offered Fall.

**BIOL 58700 - Biogeography**

**Prerequisite(s):** BIOL 33300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An introduction to the principles of biogeography. Distribution patterns, the role of history, the interactions of genetics and ecology in development of the species range, the species equilibrium theory, and the evolutionary biogeography of communities and regional biotas. Typically offered Spring Summer.

**BIOL 58800 - Plant Ecology**

Credit Hours: 3.00. The physico-chemical and biotic environment affecting plants in nature; basic ecological principles; ecosystems: productivity and management; evolutionary ecology: succession, reproductive ecology, genecology, antibiosis in plants, ecological methods. Applications to agronomy, forestry, wildlife management, outdoor recreation, and other land-use interests. Typically offered Fall Spring.

**BIOL 59100 - Field Ecology**

Credit Hours: 4.00. A field course in ecology that stresses natural history and testing ecological theory under natural conditions. Group and individual projects include observational and experimental approaches. Emphasis is on the study of plant and animal species interactions in terrestrial (including montane and coastal) and aquatic habitats. Issues in community, population, behavioral, and conservation biology are addressed. Several all-day Saturday and two weekend field trips. Offered in alternate years. Permission of instructor required. Typically offered Fall.

**BIOL 59200 - The Evolution Of Behavior**

Credit Hours: 3.00. An investigation of behaviors as adaptations: specializations of sensory and motor mechanisms involved in behavior; animal communication systems; behavioral ecology; patterns of social behavior as solutions to ecological problems, such as predator avoidance and resource exploitation. Emphasis will be on theoretical principles; examples will be broadly comparative, ranging from microorganisms to mammals. Offered in alternate years. Typically offered Spring.

**BIOL 59500 - Special Assignments**

Arrange Hours and Credit. Special work, such as directed reading, independent study or research, supervised library, laboratory, or field work, or presentation of material not available in the formal courses of the department. The field in which work is offered will be indicated in the student's record. Permission of instructor required. Typically offered Fall Spring Summer.

**BIOL 59700 - Sex And Evolution**

Credit Hours: 3.00. Covers various theoretical and empirical aspects of sexual reproduction from an evolutionary perspective. Topics include: Why did sexual reproduction evolve? What different modes of reproduction exist? How is the sex of an individual determined in different organisms? What sex ratio should exist in different species? What is sexual selection, and how does it influence male and female characteristics in various species? How does sexual selection influence human social behavior?. Typically offered Fall.

**BIOL 60100 - Graduate Seminar In Biological Sciences**

Credit Hours: 1.00. A one-credit course that provides graduate students with opportunities to: (1) explore original research and peer-reviewed literature in the life sciences, (2) better grasp the depth and implications of recent scientific

advances through discussion with students and faculty, and (3) gain written and verbal communication skills through their presentation of topics of current scientific interest. Permission of instructor required. Typically offered Fall Spring.

### **BIOL 69800 - Research MS Thesis**

Credit Hours: 1.00 to 18.00. Research MS Thesis. Permission of instructor required. Typically offered Fall Spring Summer.

## **Botany & Plant Pathology**

### **BTNY 20500 - The Spring Flora Of Indiana**

Credit Hours: 2.00. Students will be introduced to the diversity of plants in Indiana. Students will collect plants on field trips and will take them back to the laboratory for identification. Lectures accompanying these laboratories will cover basic plant morphology (necessary for keying out plants) and basic principles of plant evolution and ecology. Several day-long field trips will be made to a number of state parks in Indiana to sample different plant communities (e.g., the dwarf shore flora of Lake Michigan, bogs, prairies, hardwood forests, aquatic habitats, etc.). Typically offered Summer.

### **BTNY 21000 - Introduction To Plant Science**

Credit Hours: 4.00. An introduction to the major groups in the plant kingdom, their origin, classification, and economic importance. The areas of anatomy, morphology, cytology, physiology, biochemistry, molecular biology, genetics, and ecology will be explored as they relate to plant sciences and agriculture. Course may also be offered for dual credit with cooperating Indiana high schools upon documented approval by the Department of Botany and Plant Pathology. Typically offered Fall Spring.

### **BTNY 55500 - Aquatic Botany**

**Prerequisite(s):** BIOL 12100 FOR LEVEL UG WITH MIN. GRADE OF D AND BIOL 12200 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. This course has required class trips. Students will pay individual lodging or meal expenses where necessary. The study of algae and higher plants of the aquatic environment with emphasis on identification, morphology, ecology, role as pollutants, physiology, and control. Typically offered Fall.

## **Building Construction Management**

### **BCM 10001 - Introduction To Construction**

Credit Hours: 3.00. Introduction to Construction is a survey of the construction industry. It includes the overall construction process from initial concept through start-up of the complete facility, career opportunities in the construction industry, and an introduction to the materials and management systems used in construction, with an emphasis on vocabulary building. Typically offered Fall Spring Summer.

### **BCM 11200 - Construction Surveying Fundamentals**

**Prerequisite(s):** MA 15400 FOR LEVEL UG WITH MIN. GRADE OF C AND BCM 10001 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Introduction to basic surveying operations. Development of the surveying skills necessary to measure distances, angles, and elevations to required accuracies. Calculation of tape corrections, bearing, coordinates, traverses, and areas. Emphasis is placed on instrument use and note-keeping techniques. Typically offered Fall Spring Summer.

### **BCM 21200 - Construction Layout**

**Prerequisite(s):** BCM 11200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Application of surveying skills relevant to the field of construction. Projects include layout of buildings, route centerlines, indirect determination of elevation and distance, referencing, establishment of grade, topographic mapping, and earthwork computations. Instruments used will include transit, theodolite, automatic level, laser, and EDM. Typically offered Fall Spring Summer.

### **BCM 23000 - Mechanical And Electrical Systems**

**Prerequisite(s):** ART 15000 FOR LEVEL UG WITH MIN. GRADE OF C AND CGT 26200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Not open to building construction management technology students. An introductory study of piping, HVAC, and electrical systems, and related materials used in buildings. This course is a composite of BCM 23100, 23200, and 23300. Typically offered Fall Spring.

### **BCM 23500 - Construction Materials & Systems**

**Prerequisite(s):** ART 28900 FOR LEVEL UG WITH MIN. GRADE OF C AND BCM 10001 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An advanced study of materials and structural systems used in buildings. The study of materials

includes their properties, characteristics, design parameters and applications. A study of structures, superstructures, special structures and construction features.. Typically offered Fall Spring.

### **BCM 27000 - Materials And Estimates**

**Prerequisite(s):** ART 15000 FOR LEVEL UG WITH MIN. GRADE OF C AND BCM 23500 FOR LEVEL UG WITH MIN. GRADE OF C AND MA 15400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A study of materials, components, manufactured products, connections, details, and assemblies related to estimating construction work. Practice in estimating quantities and listing of work items in standard quantity survey format. Typically offered Fall.

### **BCM 34500 - Scheduling**

**Prerequisite(s):** BCM 27000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A study of the planning and control of construction projects. Time schedules for materials, labor, and equipment. Emphasis is on critical path method (CPM) scheduling. Typically offered Fall Spring.

### **BCM 37500 - Estimating**

**Prerequisite(s):** BCM 27000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A study of the methods and procedures used to identify, measure, and value items of construction work. Application of computer software to estimating tasks is featured. Typically offered Fall Spring Summer.

### **BCM 38000 - Concrete Construction**

**Prerequisite(s):** MET 21100 FOR LEVEL UG WITH MIN. GRADE OF C OR CET 26000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An overview of concrete construction, including material composition, behavior and handling of concrete, formwork, and concrete reinforcement. Typically offered Fall Spring.

### **BCM 45500 - Construction Company Management**

Credit Hours: 3.00. Business policy and management aspects of construction companies are studied. Included are ethics, public relations, business development, business plans, bonds, insurance, and human resource management considerations. Typically offered Fall Spring.

### **BCM 49700 - Special Topics In Construction**

Credit Hours: 0.00 to 4.00. Hours, subject matter, and credit to be arranged by staff. Typically offered Fall Spring Summer.

### **BCM 49900 - Special Assignments**

Credit Hours: 1.00 to 4.00. Special assignments for students who wish to undertake individual study on approved topics. Permission of instructor required. Typically offered Fall Spring Summer.

## **Business Administration**

### **BA 39000 - Topics In Business**

Credit Hours: 1.00 to 4.00. An opportunity to investigate and study particular problems and topics in the field of business. Typically offered Summer Fall Spring.

### **BA 49000 - Problems In Business**

Credit Hours: 1.00 to 4.00. Topics selected for enrichment and further study in special areas of business. Typically offered Summer Fall Spring.

## **Business-Accounting**

### **GBA 22700 - Principles Of Accounting I**

Credit Hours: 3.00. Not open to students with credit in MGMT 200. Introductory accounting includes the basic language, principles, and procedures of accounting. Emphasis on recording, classifying, and summarizing accounting data for financial statement reporting and analysis. Assumed Ability: Students who can perform at the level of MA 111 should enroll in this course. Students below that level of ability should not. Typically offered Fall Spring Summer.

### **GBA 22800 - Principles Of Accounting II**

**Prerequisite(s):** MGMT 20000 FOR LEVEL UG WITH MIN. GRADE OF C OR GBA 22700 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Continuation of GBA 22700 with emphasis on accounting for partnerships, corporations, and analysis of financial statements. Accounting for manufacturing firms, managerial controls and cost determination are included. Typically offered Fall Spring.

### **GBA 32000 - Introduction To Federal Taxation**

**Prerequisite(s):** GBA 34000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An introductory course that emphasizes the taxation of individuals and sole proprietorships. A study of taxation law cases will be explored, but course will concentrate on practical applications of federal tax form preparation as it pertains to gross income inclusions/exclusions, adjustments, deductions, credits, and penalties. A computerized tax program will be used by the students. Selected topics include: sale of capital assets, deferred compensation plans, IRS practice and procedures, and personal tax planning.. Typically offered Fall.

### **GBA 33000 - Cost Accounting**

**Prerequisite(s):** MGMT 20000 FOR LEVEL UG WITH MIN. GRADE OF C OR GBA 22700 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Not open to students with credit in MGMT 201. Accounting for management planning and control, including cost accounting, budgeting, accounting control system, capital budgeting, and use of accounting information in management decisions.. Typically offered Fall Spring.

### **GBA 34000 - Intermediate Accounting I**

**Prerequisite(s):** GBA 22800 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Accounting theory and principles of asset valuation and income determination concentrating on cash, receivables, inventory, fixed assets, and intangible assets. Typically offered Fall Spring.

### **GBA 34100 - Intermediate Accounting II**

**Prerequisite(s):** GBA 34000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Accounting theory and principles of liability measurement and stockholders equity valuation with emphasis on contingencies, contributed capital, retained earnings, pensions, leases, and financial statement analysis.. Typically offered Fall Spring.

### **GBA 35000 - VITA Program**

**Prerequisite(s):** GBA 32000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course is a service-learning opportunity for students in the area of personal tax preparation. It provides students with hands on experience in preparing income tax returns for the public. In addition, students gain familiarity with income tax preparation software. Typically offered Summer Fall Spring.

### **GBA 35500 - Advanced Cost Accounting**

**Prerequisite(s):** MGMT 20100 FOR LEVEL UG WITH MIN. GRADE OF C OR GBA 33000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Advanced cost accounting topics. Typically offered Fall Spring.

### **GBA 36000 - Federal Taxation**

**Prerequisite(s):** GBA 32000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An advanced course that emphasizes the taxation of C-Corporations, S-Corporations, Partnerships, Estates, and Trusts. Course will address tax planning opportunities for shareholders and partners as well as estate planning for individuals. Compliance with federal agencies and the preparation of appropriate tax forms will be explored. Also included is an overview of tax research using computerized retrieval and loose leaf tax services.. Typically offered Fall.

### **GBA 37100 - Advanced Accounting**

**Prerequisite(s):** GBA 34100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Accounting theory and principles of business combinations, consolidated entities, foreign currency translation, and interim financial reporting and partnerships.. Typically offered Spring.

### **GBA 37200 - Auditing**

**Prerequisite(s):** GBA 34100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Principles, standards, and procedures applied in auditing the financial records and financial statements of an entity, including the legal aspects and ethical responsibilities of the accountant.. Typically offered Fall.

### **GBA 37500 - Governmental Accounting**

**Prerequisite(s):** GBA 34000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Accounting theory and principles for nonprofit entities, governmental entities, and schools and hospitals. Distinguishes between for-profit and not-for-profit accounting concepts.. Typically offered Spring.

### **GBA 38000 - Accounting For Information Systems**

**Prerequisite(s):** GBA 34100 FOR LEVEL UG WITH MIN. GRADE OF D AND (MGMT 20100 FOR LEVEL UG WITH MIN. GRADE OF D OR GBA 33000 FOR LEVEL UG WITH MIN. GRADE OF D)



Credit Hours: 3.00. Examines the systems for collecting and processing information necessary in planning decision making and the control of business organizations. It covers system development, documentation techniques, database systems, internal control, and application systems. Through projects, students will apply their systems expertise and improve their skills in using applications software such as spreadsheet programs. Assumed ability: Computers: Students who have had a semester of computer literacy or a similar course will find GBA 38000 less difficult than students with no computer background. Typically offered Fall.

### **GBA 39000 - Independent Study**

Credit Hours: 1.00 to 6.00. Hours and subject matter to be arranged with General Business Section.. Typically offered Summer Fall Spring.

### **GBA 41000 - Financial Statement Analysis**

**Prerequisite(s):** GBG 33300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is a continuation of Principles of Finance. It provides participants with a review of topics covered in finance and an opportunity for practical application of those topics. Typically offered Fall Spring Summer.

### **GBA 41200 - Financial Fraud and International Financial Reporting Standards**

**Prerequisite(s):** GBA 34100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit hours: 3.00. An examination of schemes used to produce fraudulent financial statements and methods to detect such schemes; a survey of International Financial Reporting Standards (IFRS) used by non-US firms for their financial reporting. Typically offered Summer Fall Spring.

## **Business Analytics**

### **BIZA 32500 - Applied Business Statistics**

**Prerequisite(s):** BUSM 22500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. The course topics will include multiple regression, ANOVA, time series analysis, and non-parametric tests. The students will be able to apply statistics to business problems. Typically offered Fall Spring Summer.

### **BIZA 42000 - Decision Analytics**

**Prerequisite(s):** ISM 32000 FOR LEVEL UG WITH MIN. GRADE OF C- OR MGMT 32000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An overview of spreadsheet models available to analyze decision problems in various functional fields including finance, marketing, and operations. The course topics will include optimization, simulation and decision making under uncertainty. Typically offered Fall Spring Summer.

### **BIZA 49000 - Senior Project**

**Prerequisite(s):** BIZA 32500 FOR LEVEL UG WITH MIN. GRADE OF C- AND ISM 40800 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Students will work with a faculty member on a research project in their major. They will contribute to ongoing research while learning current research techniques in management. During this process the students will develop critical thinking and oral and written communication skills. If human subjects are to be involved, proper IRB clearance will be obtained in advance. Typically offered Fall Spring Summer.

## **Business General**

### **GBG 12700 - Development Of Business In The United States**

Credit Hours: 3.00. Survey of the development of American business enterprise and business practices that have evolved historically from the colonial period to the present. Typically offered Fall Spring Summer.

### **GBG 25000 - Principles Of Business Budgeting**

Credit Hours: 3.00. A survey of general budgetary operations in a business organization. This course content includes the various types of budgets, capital and operating budgets, expenditures, use of budgets to control operations and relationship of budgets to the accounting functions. Typically offered Fall Spring Summer.

### **GBG 25900 - Law And Society**

Credit Hours: 3.00. This course provides an introduction to and overview of the American legal system. The student will also learn how the law affects individuals and businesses on a daily basis. Topic coverage will include the various sources of law, legal reasoning, the courts and dispute resolution, the legal profession, governmental power, individual rights, criminal versus civil law, family relationships, torts, contracts, business relationships, and property. Upon completion of the course, the student will have a thorough understanding of the institutions and processes of the American legal system. The student will be able to distinguish civil law from criminal law, describe the litigation

process and its objectives and goals, and will possess a basic knowledge of legal issues that most Americans face in their daily lives. Typically offered Summer Fall Spring.

### **GBG 26000 - Business Law**

**Prerequisite(s):** GBG 12700 FOR LEVEL UG WITH MIN. GRADE OF C AND MGMT 20000 FOR LEVEL UG WITH MIN. GRADE OF C AND (ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF C OR ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 3.00. A course designed to give students an understanding of laws covering business transactions. Covers uniform commercial code, contracts, negotiable instruments, and sales of personal and real property. The laws governing partnerships, corporations, and individual entrepreneur are included.. Typically offered Fall Spring.

### **GBG 27000 - Small Business & Entrepreneurial Ventures**

**Prerequisite(s):** GBG 33300 FOR LEVEL UG WITH MIN. GRADE OF C AND GBG 26000 FOR LEVEL UG WITH MIN. GRADE OF C AND GBG 35100 FOR LEVEL UG WITH MIN. GRADE OF C AND GBM 32900 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A study of the basic principles of business operations associated with starting and managing small businesses. Major emphasis is given to strategic planning, organization, direction, and control of the small business. Topics will include marketing, financing, and management techniques.. Typically offered Fall Spring Summer.

### **GBG 29000 - Independent Study**

Credit Hours: 1.00 to 6.00. Hours and subject matter to be arranged with General Business Section chairperson.. Typically offered Fall Spring.

### **GBG 30000 - Business Internship**

**Prerequisite(s):** GBG 12700 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 1.00 to 3.00. Open to students in the general business associate degree program, the Bachelor of Liberal Studies program or the bachelor's degree program in supervision who have completed a minimum of 45 semester hours of course work and have a high academic standing.. Typically offered Spring Summer Fall.

### **GBG 32500 - Supply Chain Management**

**Prerequisite(s):** ECON 25100 FOR LEVEL UG WITH MIN. GRADE OF C AND MGMT 20100 FOR LEVEL UG WITH MIN. GRADE OF C AND GBG 26000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An introduction to how firms achieve and sustain superior performance by implementing superior strategies in their market channels, supply chains, and transportation linkages. Typically offered Fall Spring.

### **GBG 33300 - Principles Of Finance**

**Prerequisite(s):** ECON 25100 FOR LEVEL UG WITH MIN. GRADE OF C AND ECON 25200 FOR LEVEL UG WITH MIN. GRADE OF C AND MGMT 20100 FOR LEVEL UG WITH MIN. GRADE OF C AND GBA 22800 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Management of the financial affairs of the business; use of financial statements, tools, and concepts for measuring and planning for profitability and liquidity.. Typically offered Fall Spring.

### **GBG 34400 - Business Ethics**

**Prerequisite(s):** (ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF C OR ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF C) AND GBG 12700 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An examination of the situations and facts which give rise to ethical problems in a business setting, and the discussion of alternate courses of action which might and should be taken. The course introduces students to ethical concepts that are relevant to resolving moral issues in business; to the reasoning and analytical skills needed to apply ethical concepts to business decisions; to identify the moral issues involved in the management of specific problem areas in business; and to provide an understanding of the social and natural environments within which moral issues in business arise.. Typically offered Fall Spring.

### **GBG 35100 - Organization And Management**

**Prerequisite(s):** (ECON 25100 FOR LEVEL UG WITH MIN. GRADE OF C OR ECON 25200 FOR LEVEL UG WITH MIN. GRADE OF C) AND (MGMT 20100 FOR LEVEL UG WITH MIN. GRADE OF C OR GBA 33000 FOR LEVEL UG WITH MIN. GRADE OF C) AND GBG 26000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An examination of the modern enterprise from the perspective of the organization and management of its internal operations and the theory and practice of management. Typically offered Fall Spring.

### **GBG 35200 - Organization And Management II**

**Prerequisite(s):** GBG 35100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A continuation of GBG 3510, with an emphasis on designing mechanisms to integrate the individual into the organization and management systems through an examination of decision making, communication and interpersonal relations from the perspective of the process of management. Typically offered Summer Fall Spring.

### **GBG 35300 - Organization And Environment**

**Prerequisite(s):** GBG 35100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An examination of the managerial issues surrounding the relationships and interactions that occur between the enterprise and individuals, organizations, and institutional structures outside its direct control. Topics include inter-organizational networks, trade associations, regulatory bodies and market structures. Typically offered Summer Fall Spring.

### **GBG 35400 - Management Information Systems**

**Prerequisite(s):** GBG 35100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An introduction to Information Systems and Technology from the perspective of the line manager. Emphasis is on the role and function of information systems in decision making and as an element of organizational design. Typically offered Summer Fall Spring.

### **GBG 36000 - Commercial And Property Law**

**Prerequisite(s):** GBG 26000 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. This course presents a study of the law of property, sales, commercial paper, bank transactions and secured transactions with particular reference to the Uniform Commercial Code along with the nature of personal property and bailments and some examination of the rules pertaining to real property estates and conveyances. Typically offered Summer Fall Spring.

### **GBG 36100 - Agency And Sports Law**

Credit Hours: 3.00. This course explores the doctrine of agency and how it relates to management of sports and sport talent as well as to the general employment field. Sports contracts, agents, torts and labor issues will be explored. Special emphasis will be given to the growing area of tort liability to participants and spectators in both amateur and professional sports. Typically offered Summer Fall Spring.

### **GBG 36200 - Employment And Labor Law**

Credit Hours: 3.00. This course provides an introduction to the growing body of law that governs the employment relationship. The four primary areas to be explored include the laws concerning union organization and collective bargaining, the employment-at-will doctrine, employment discrimination, and the growing complexity of managing the employment life cycle in light of changes in the laws governing the workplace. A 12-15 page case analysis is required. Typically offered Summer Fall Spring.

### **GBG 36300 - Regulation And Forms Of American Business Enterprises**

Credit Hours: 3.00. This course provides an in-depth examination of a variety of business entities (including sole proprietorships, partnerships, and corporations and limited liability companies), and their management contracts and franchises will also be explored. A minimum of 12-15 page paper and presentation are required. Typically offered Summer Fall Spring.

### **GBG 36400 - Constitutional Law**

Credit Hours: 3.00. This course studies the United States Constitution and how it has been interpreted by the United States Supreme Court. Selected issues will illustrate legal techniques for describing, analyzing, and influencing the process by which the U.S. Supreme Court resolves disputes, with focus on the Bill of Rights and their interpretation. A short unit on the Constitution of the State of Indiana will also be presented. A minimum 12-15 page paper is required. Typically offered Summer Fall Spring.

### **GBG 36500 - Production/Operations Management**

**Prerequisite(s):** STAT 30200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An introductory course concerning the management of production, distribution, and service systems operations. Topics covered include design of products, processes and facilities, planning, scheduling, and controlling inventory and quality. Typically offered Fall Spring.

### **GBG 37900 - Movies In Business**

Credit Hours: 3.00. The course addresses the relationship between how business activities are conducted in the modern world and the nature of the larger society which shapes and is shaped by commercial activities. Specific attention will be paid to the nature of business, managerial and leadership theory. Typically offered Fall Spring Summer.

### **GBG 39000 - Undergraduate Special Problems**

Credit Hours: 1.00 to 3.00. Individual participation, supervised reading, laboratory or field experiments, or research in special areas of the general business field.. Typically offered Spring Summer Fall.

### **GBG 40200 - Entrepreneurship And Employee Innovation**

**Prerequisite(s):** GBM 32900 FOR LEVEL UG WITH MIN. GRADE OF C AND GBG 33300 FOR LEVEL UG WITH MIN. GRADE OF C AND GBG 35100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course intends to provide students with a solid foundation in terms of the vital role played by entrepreneurs and intrapreneurship in today's business world. Students will be provided with principles of managing the creation and development of new enterprises, and knowledge and techniques for dealing with issues associated with the process of entrepreneurship development. Students will also be given instructions on how to apply the entrepreneurial philosophy and skills in the established corporate environments or systematic business models, namely adopting an intrapreneurial approach to business management. Typically offered Fall Spring.

### **GBG 40500 - Business Strategy**

**Prerequisite(s):** GBG 35100 FOR LEVEL UG WITH MIN. GRADE OF D AND GBM 32900 FOR LEVEL UG WITH MIN. GRADE OF D AND GBI 30100 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. A capstone course for Business and Accounting students which focuses on the formulation and implementation of business strategy within the enterprise. Typically offered Fall Spring.

### **GBG 42000 - Legal Research And Writing**

**Prerequisite(s):** (GBG 26000 FOR LEVEL UG WITH MIN. GRADE OF C OR GBG 25900 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 3.00. This course provides an introduction to the field of legal research with an overview of the various legal sources and their uses. Student will be able to a certain extent, to choose subject matter of interest to research and make a legal argument. Through discussion, demonstration, and actual use of the materials in class, students are given hands-on training in the use of primary and secondary legal sources. A minimum of a 12-15 page paper, a group project and an oral presentation/defense are required. Extensive internet and library use required. Typically offered Summer Fall Spring.

### **GBG 45000 - Women In Business**

**Prerequisite(s):** GBG 12700 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course is an investigation of the role of women in the contemporary American business settings. The course will focus on: women in a corporate management setting, women in small/entrepreneurial ventures, the development and maintenance of male/female business roles, and the cultural meaning of gender differences in the workplace. Typically offered Summer Fall Spring.

### **GBG 49000 - Independent Study: Contemporary Issues**

Credit Hours: 1.00 to 6.00. Special subjects for investigation and experiment according to the individual student's interest and need.. Typically offered Fall Spring Summer.

## **Business International**

### **GBI 30100 - International Business**

**Prerequisite(s):** ECON 25100 FOR LEVEL UG WITH MIN. GRADE OF C AND ECON 25200 FOR LEVEL UG WITH MIN. GRADE OF C AND GBG 33300 FOR LEVEL UG WITH MIN. GRADE OF C AND GBM 32900 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course studies the subject of international business which includes administration, marketing, finance and other broad managerial concerns at the international level. The conceptual base of the course is the basic economic fundamentals that affect trade, finance, and other business activities among countries. Government policies, social and cultural issues in international business activities are also discussed.. Typically offered Fall Spring.

### **GBI 33000 - Foreign Trade Documentation & Procedures**

Credit Hours: 3.00. Involves the student directly in the actual details of processing an export order from the time it is received until payment is received. Covers import/export shipping, documents, packaging, traffic procedures and insurance. The course is structured for the person who had had no previous foreign trade experience. Typically offered Fall Spring Summer.

### **GBI 34000 - International Marketing**

Credit Hours: 3.00. The study of international marketing and business emphasizing the important aspects of cross-cultural communication and the factors of the international marketing mix. Some of the topics covered include cultural dynamics, political environment, international legal environment, global market opportunities, global marketing strategies, and related case presentations. Typically offered Fall Spring.

### **GBI 37000 - International Trade**

Credit Hours: 3.00. Aspects of international economic behavior of households, firms, and national governments. Develops and uses tools of economic theory to discuss the benefits and costs of international economic interdependence and the implications of increasing international linkages of households and firms on the role of national governments. Typically offered Fall Spring Summer.

### **GBI 45000 - International Finance And Banking**

**Prerequisite(s):** GBG 33300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course will provide students with an awareness of the various issues, theories, and practices related to international finance. The course will provide insights into the role of international banking and finance with special attention given to exchange rates, importing and exporting, foreign markets, tourism, currency loans, capital budgeting for foreign projects, and policies which affect foreign funding. Typically offered Fall Spring Summer.

## **Business Management**

### **BUSM 10000 - Freshman Seminar In Business**

Credit Hours: 1.00. This course will familiarize new students with Purdue University Northwest, the College of Business and its programs and people, and the basic tools needed to be successful in college. Focus will be on the individual development of students with regard to future professional employment and also his or her educational planning. Typically offered Fall Spring.

### **BUSM 10100 - Introduction To Business**

Credit Hours: 3.00. An introduction to the internal operations and external environment of contemporary business. Consideration is also given to the social economic role of business in our society. The basic business functions and role of management are also discussed. Typically offered Fall Spring Summer.

### **BUSM 10500 - Quantitative Methods For Business**

Credit Hours: 3.00. Quantitative techniques applied in business situations that are essential to business activities. Topics covered include finance charges and compound interest, patrol, tax deductions, depreciation, descriptive statistics and graphical analysis. Typically offered Summer Fall Spring.

### **BUSM 19000 - Freshman Level Problems In Management**

Credit Hours: 1.00 to 4.00. Investigation into a specific topic area of Management. Arrange with instructor before enrolling. Typically offered Fall Spring Summer.

### **BUSM 20000 - Second Year Seminar in Business**

**Prerequisite(s):** BUSM 10000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 1.00. This is a continuation of BUSM 10000. Students will explore career paths, develop a job search plan, and prepare resumes and cover letters. Students will further develop their online professional presences. Students will begin to develop interviewing and presentation skills. Typically offered Fall Spring.

### **BUSM 22500 - Fundamental Managerial Statistics**

**Prerequisite(s):** MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. The foundation for statistical decision making. Topics include: probability theory, descriptive statistics, estimation, and statistical inference with managerial applications. Typically offered Fall Spring Summer.

### **BUSM 29000 - Problems In Management**

Credit Hours: 0.00 to 4.00. Arrange with instructor before enrolling. Investigation in a specific management field. Permission of instructor required. Typically offered Fall Spring Summer.

### **BUSM 30000 - Third Year Seminar In Business**

**Prerequisite(s):** BUSM 20000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 1.00. This is a continuation of BUSM 20000. Students will develop professional etiquette skills, develop an understanding of the issues surrounding of workforce diversity, and continue to build their professional presences. Typically offered Fall Spring.

### **BUSM 30100 - Management Career Lectures**

Credit Hours: 2.00. Workshops and lectures involving students in the decision-making process for career planning. Visiting executives discuss career opportunities in their fields. Emphasis is on future academic planning, exploring careers, search strategy, interviewing, career progression, and other career and academic issues. Typically offered Fall Spring.

### **BUSM 30500 - Business Statistics**

**Prerequisite(s):** MGMT 22500 FOR LEVEL UG WITH MIN. GRADE OF C OR BUSM 22500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Introduction to business statistics as related to facilitating managerial decision making. Topics include descriptive statistics, probability models, estimation, hypothesis testing, and regression analysis. Students use software to do their own analyses. Typically offered Summer Fall Spring.

### **BUSM 30600 - Management Science**

**Prerequisite(s):** MGMT 22500 FOR LEVEL UG WITH MIN. GRADE OF C OR BUSM 22500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Use of optimization, simulation, and decision theory models to support management decision making. Emphasis on modeling and interpreting results for managerial applications of linear and integer programming models, network problems, simulation models, and decision analysis. Computer applications are stressed. Typically offered Fall Spring.

### **BUSM 32000 - Business Communication**

Credit Hours: 2.00. The Business Communication course is designed to provide students with the required tools to communicate in an effective and succinct manner within a business context, including written and oral communication and presentation software. Typically offered Fall Spring Summer.

### **BUSM 33010 - Non Profit Organizational Structures**

Credit Hours: 3.00. This course covers the role and responsibilities of positions and structures including the role of volunteers in non-profit organizations. Typically offered Fall Spring Summer.

### **BUSM 33300 - Total Quality Management**

**Prerequisite(s):** OBHR 33000 FOR LEVEL UG WITH MIN. GRADE OF C OR BA 23000 FOR LEVEL UG WITH MIN. GRADE OF C OR OBHR 22100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course focuses on the management culture, philosophy, practices, and processes necessary to develop a total quality orientation. The course bridges quantitative, behavioral, and strategic concepts for designing organizations to be dynamic, integrated systems whose outputs are monitored for quality and continuously improved. Not open to students with credit in IET 37800. Typically offered Fall Spring Summer.

### **BUSM 34000 - Managerial Decision Analysis**

**Prerequisite(s):** ECON 25100 FOR LEVEL UG WITH MIN. GRADE OF C- AND ECON 25200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A rigorous and practical treatment of microeconomic and finance theories as applied to managerial decision making. Emphasis on the tools used to analyze the behavior of individual economic units. Topics include: consumer behavior and demand, decision under uncertainty, production and cost, factor demand, market structure. Typically offered Fall Spring Summer.

### **BUSM 34400 - Business Ethics**

**Prerequisite(s):** (ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF C-) AND (BUSM 10100 FOR LEVEL UG WITH MIN. GRADE OF C- OR GBG 12700 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 3.00. An examination of the situations and facts that give rise to ethical problems in a business setting, and discussion of alternate courses of action which might or should be taken. Students are introduced to ethical concepts that are relevant to resolving moral issues in business. Typically offered Fall Spring Summer.

### **BUSM 35100 - Organization Theory And Design**

**Prerequisite(s):** (ECON 25100 FOR LEVEL UG WITH MIN. GRADE OF C- OR ECON 25200 FOR LEVEL UG WITH MIN. GRADE OF C-) AND (ACC 20100 FOR LEVEL UG WITH MIN. GRADE OF C- OR MGMT 20100 FOR LEVEL UG WITH MIN. GRADE OF C-) AND (BUSM 35400 FOR LEVEL UG WITH MIN. GRADE OF C- OR GBG 26000 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 3.00. An examination of the modern enterprise from the perspective of the organization and management of its internal operations and the theory and practice of management. Permission of instructor required. Typically offered Fall Spring Summer.

### **BUSM 35300 - Organization And Environment**

**Prerequisite(s):** BUSM 35100 FOR LEVEL UG WITH MIN. GRADE OF C- OR GBG 35100 FOR LEVEL UG WITH MIN. GRADE OF C-

An examination of the managerial issues surrounding the relationship and interactions that occur between the enterprise and individuals, organizations, and institutional structures outside its direct control. Topics include inter-organizational networks, trade associations, regulatory bodies and market structures. Typically offered Fall Spring Summer.

### **BUSM 35400 - Legal Foundations Of Business I**

Credit Hours: 3.00. An examination and study, for management students, of the nature and place of law in our society, both national and international, the social and moral bases of law enactment, regulation of business, legal liability, enforcement procedures, and the legal environment for managers. Typically offered Fall Spring Summer.

### **BUSM 36000 - Production And Operations Management**

**Prerequisite(s):** MGMT 22500 FOR LEVEL UG WITH MIN. GRADE OF C OR BUSM 22500 FOR LEVEL UG WITH MIN. GRADE OF C OR STAT 30100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An introductory course concerning the management of production, distribution and service system operations. Topics covered include design of products, processes and facilities, planning, scheduling, and controlling inventory and quality. Typically offered Summer Fall Spring.

### **BUSM 36100 - Business Operations**

**Prerequisite(s):** (BA 12100 FOR LEVEL UG WITH MIN. GRADE OF C OR ACC 12100 FOR LEVEL UG WITH MIN. GRADE OF C) AND STAT 13000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. The operations function in a business enterprise. Topics include measuring capacity and productivity, product and process design, facility location and layout, inventory and scheduling. Typically offered Summer Fall Spring.

### **BUSM 36300 - Total Quality Techniques**

**Prerequisite(s):** MGMT 22500 FOR LEVEL UG WITH MIN. GRADE OF C OR BUSM 22500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Building upon basic statistical principles, this course covers the topics of acceptance sampling, control charts, capability, experimental design and regression analysis. Not open to students with credit in IET 35500. Typically offered Fall Spring Summer.

### **BUSM 36400 - Emerging Issues In Total Quality Techniques**

**Prerequisite(s):** MGMT 36000 FOR LEVEL UG WITH MIN. GRADE OF C OR IET 35500 FOR LEVEL UG WITH MIN. GRADE OF C OR BUSM 36000 FOR LEVEL UG WITH MIN. GRADE OF C OR GBG 36500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Topical coverage will change as the field of quality management evolves. Issues such as Just in Time, Taguchi methods, Ishikawa, Ohno, Shingo and Toyota systems will be studied. Typically offered Fall Spring Summer.

### **BUSM 38000 - International Business**

**Prerequisite(s):** (MGMT 10100 FOR LEVEL UG WITH MIN. GRADE OF C OR BUSM 10100 FOR LEVEL UG WITH MIN. GRADE OF C OR GBG 12700 FOR LEVEL UG WITH MIN. GRADE OF C) AND (ECON 25200 FOR LEVEL UG WITH MIN. GRADE OF C OR ECON 21100 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 3.00. An introduction to the nature of international business. The course addresses the international business environment, including economic, political, legal, and social aspects. The assessment of international opportunities and risk is also addressed. Typically offered Fall Spring Summer.

### **BUSM 38300 - Practicum In Quality Management**

**Prerequisite(s):** (MGMT 36300 FOR LEVEL UG WITH MIN. GRADE OF C OR BUSM 36300 FOR LEVEL UG WITH MIN. GRADE OF C) AND (MGMT 33300 FOR LEVEL UG WITH MIN. GRADE OF C OR BUSM 33300 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 3.00. This course is run in conjunction with the Small Business Institute of the Department of Management. Students will design and help implement quality management systems and concepts in an actual business. Typically offered Fall Spring Summer.

### **BUSM 39000 - Junior Level Problems In Management**

Credit Hours: 0.00 to 4.00. The Accounting Internship provides work experience in businesses or other institutions. Permission of instructor required. Typically offered Fall Spring Summer.

### **BUSM 39100 - Internship In Business**

Credit Hours: 1.00 to 3.00. Students work in a business organization in an organized and supervised situation, designed to provide experience and challenge in a business situation. Students are evaluated by the organization supervisor and the academic coordinator. Typically offered Summer Fall Spring.

### **BUSM 39200 - Business Study Abroad**

Credit Hours: 3.00. This course explores international business issues, including those related to selected foreign countries. The course requires international travel. Students will identify, explain and analyze differences and similarities among international business management and practices. Permission of instructor required.

### **BUSM 40000 - Fourth Year Seminar In Business**

**Prerequisite(s):** BUSM 30000 FOR LEVEL UG WITH MIN. GRADE OF D- AND BUSM 45000 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 1.00. This concludes the sequence of professional development courses for the College of Business program. Students will develop a sense of career readiness and assess their business knowledge as they complete their program. Typically offered Fall Spring Summer.

### **BUSM 40010 - Non Profit Management**

Credit Hours: 3.00. The course includes principles of non-profit management as well as the roles and responsibilities of a non-profit board of directors, and become acquainted with the fundamentals of the programming and budgeting process. Typically offered Fall Spring Summer.

### **BUSM 40100 - Global Business**

**Prerequisite(s):** FIN 31000 FOR LEVEL UG WITH MIN. GRADE OF C- OR GBG 33300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course studies the subject of international business which includes administration, marketing, finance and other broad managerial concerns at the international level. The conceptual base of the course is the basic economic fundamentals that affect trade, finance, and other business activities among countries. Government policies, social and cultural issues in international business activities are also discussed. Typically offered Fall Spring Summer.

### **BUSM 41100 - Entrepreneurship And Employee Innovation**

**Prerequisite(s):** (MKG 32400 FOR LEVEL UG WITH MIN. GRADE OF C- OR MGMT 32300 FOR LEVEL UG WITH MIN. GRADE OF C-) AND (FIN 31000 FOR LEVEL UG WITH MIN. GRADE OF C- OR GBG 33300 FOR LEVEL UG WITH MIN. GRADE OF C-) AND (BUSM 35100 FOR LEVEL UG WITH MIN. GRADE OF C- OR GBG 35100 FOR LEVEL UG WITH MIN. GRADE OF C-) OR (GBM 32900 FOR LEVEL UG WITH MIN. GRADE OF C- OR MKG 22400 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 3.00. This course intends to provide students with a solid foundation in terms of the vital role played by entrepreneurs and intrapreneurship in today's business world. Students will be provided with principles of managing the creation and development of new enterprises, and knowledge and techniques for dealing with issues associated with the process of entrepreneurship development. Students will also be given instructions on how to apply the entrepreneurial philosophy and skills in the established corporate environments or systematic business models, namely adopting an intrapreneurial approach to business management. Typically offered Fall Spring Summer.

### **BUSM 41400 - Non Profit Grant Writing And Fund Raising**

Credit Hours: 3.00. The purpose of the course is to prepare students to write grants for non-profit organizations and methods of basic fund raising and become acquainted with the fundamentals of the programming and budgeting process. Typically offered Fall Spring Summer.

### **BUSM 45000 - Strategic Management: Capstone**

**Prerequisite(s):** (MGMT 31000 FOR LEVEL UG WITH MIN. GRADE OF C- OR FIN 31000 FOR LEVEL UG WITH MIN. GRADE OF C- OR GBG 33300 FOR LEVEL UG WITH MIN. GRADE OF C-) AND (MGMT 32400 FOR LEVEL UG WITH MIN. GRADE OF C- OR MKG 32400 FOR LEVEL UG WITH MIN. GRADE OF C- OR GBM 32900 FOR LEVEL UG WITH MIN. GRADE OF C- OR MGMT 32300 FOR LEVEL UG WITH MIN. GRADE OF C- OR MKG 22400 FOR LEVEL UG WITH MIN. GRADE OF C-) AND (MGMT 36000 FOR LEVEL UG WITH MIN. GRADE OF C- OR BUSM 36000 FOR LEVEL UG WITH MIN. GRADE OF C- OR GBG 36500 FOR LEVEL UG WITH MIN. GRADE OF C-) AND (OBHR 33000 FOR LEVEL UG WITH MIN. GRADE OF C- OR OLS 25200 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 3.00. An extensive study of management problems in business at policy-making levels; primarily for students majoring in management. Should be taken only in last semester of senior year. Typically offered Spring Summer Fall.

### **BUSM 46500 - Forecasting For Management**

**Prerequisite(s):** MGMT 22500 FOR LEVEL UG WITH MIN. GRADE OF C OR BUSM 22500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A course examining the statistical techniques of forecasting. Emphasis is placed on time-series data and computer based methods of estimation and testing of marketing and financial data will be studies. Not open to students with credit in ECON 46500. Typically offered Fall Spring Summer.

### **BUSM 48900 - International Management**

**Prerequisite(s):** OBHR 33000 FOR LEVEL UG WITH MIN. GRADE OF C OR BA 23000 FOR LEVEL UG WITH MIN. GRADE OF C OR OBHR 22100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Explores how differences in cultural core values shape behavior and attitudes of workers, managerial colleagues, and negotiating partners. Special attention is directed towards the importance of culture in managerial decision making. Typically offered Fall Spring Summer.

### **BUSM 49000 - Problems In Industrial Management**

Credit Hours: 1.00 to 4.00. Investigation in a specific management field. Arrange with instructor before enrolling. Permission of instructor required. Typically offered Fall Spring Summer.

### **BUSM 49500 - Internship in Management**



Credit Hours: 1.00 to 4.00. A special course in selected areas of management, designed to provide practical field experience under professional supervision in selected situations related to the student's area of specialization. Typically offered Summer Fall Spring.

### **BUSM 49900 - Undergraduate Research In Management**

Credit Hours: 3.00. Students will work with a faculty member on research project in their major. They will contribute to ongoing research while learning current research techniques in management. During this process the students will develop critical thinking and oral and written communication skills. Permission of instructor required. Typically offered Fall Spring Summer.

## **Business Marketing**

### **GBM 30000 - Business Internship**

Credit Hours: 3.00. Open to students in the general business associate degree program, the Bachelor of Liberal Studies program or the bachelor's degree program in supervision who have completed a minimum of 45 semester hours of course work and have a high academic standing.. Typically offered Fall Spring Summer.

### **GBM 32500 - Marketing Research**

**Prerequisite(s):** GBM 32900 FOR LEVEL UG WITH MIN. GRADE OF C AND STAT 30100 FOR LEVEL UG WITH MIN. GRADE OF C AND MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Systematic gathering, recording and analysis of data about problems relating to the marketing of goods and services. Topics covered include: choice of research design, methods of data collection, survey sampling, analysis and interpretation of data, and preparing the research report.. Typically offered Fall Spring.

### **GBM 32900 - Principles Of Marketing**

**Prerequisite(s):** (ECON 25100 FOR LEVEL UG WITH MIN. GRADE OF C OR ECON 25200 FOR LEVEL UG WITH MIN. GRADE OF C) AND MGMT 20000 FOR LEVEL UG WITH MIN. GRADE OF C AND GBG 12700 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Overview of marketing for all undergraduates designed to give a basic understanding of the principles of marketing and the operation of our marketing system. Marketing decision-making will explore the process of planning and executing the conception, pricing, promotion and distribution of ideas, goods, and services to create exchanges that satisfy individual and organizational objectives.. Typically offered Fall Spring Summer.

### **GBM 38000 - Selling Principles & Practices**

**Prerequisite(s):** GBM 32900 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND MGMT 32300 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. An introductory course which examines the phases of salesmanship: preapproach, approach, demonstration, objections, and closing. This course includes development of a sales force, the role of selling in our economy and the relationship of personal selling to other elements in the marketing mix.. Typically offered Fall.

### **GBM 38100 - Principles Of Advertising**

**Prerequisite(s):** GBM 32900 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Provides an understanding and evaluation of the advertising function within the modern business environment. Strategic advertising planning emphasizes the design, management, and integration of a firm's promotional strategy. Course covers history of advertising; the advertising agency; budgeting; advertising media including: print, broadcast, outdoor, specialty, and nonmedia; and the role of advertising in the marketing mix.. Typically offered Fall.

### **GBM 38500 - Consumer Behavior**

**Prerequisite(s):** GBM 32900 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An interdisciplinary survey of consumer behavior theory focused on psychological, sociological, and cultural influences on consumer choice and use of products and services. Topics include personality, societal influences, information processing, information search, product choice, purchase, and postpurchase activities. Applications to promotion, product design, distribution, pricing, and segmentation strategies are also emphasized.. Typically offered Fall Spring.

### **GBM 38800 - Principles Of Retailing**

**Prerequisite(s):** GBM 32900 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Functions of a retail establishment are examined. The topics covered include retail operations planning; buyer behavior, store design, location, and layout; organizing and staffing the retail firm; merchandise management; pricing strategies; promotional strategy; credit; financial management; and a discussion of the future of retailing. Significant developments in the social, economic, technological, and legal aspects of retailing are emphasized.. Typically offered Fall.

**GBM 38900 - Marketing Seminar**

**Prerequisite(s):** GBM 32900 FOR LEVEL UG WITH MIN. GRADE OF C AND GBM 38100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Integration of marketing courses to relevant marketing problems through the analysis of cases and use of a marketing simulation. This capstone course is expected to establish the basis for strategic marketing, planning, and the practice of marketing decision making. Typically offered Fall Spring.

**GBM 39000 - Special Topics-Marketing**

Credit Hours: 1.00 to 3.00. Individual participation, supervised reading, laboratory or field experiments, or research in special areas of the general business field.. Typically offered Fall Spring Summer.

**GBM 40000 - Marketing Management**

**Prerequisite(s):** GBM 38100 FOR LEVEL UG WITH MIN. GRADE OF C AND GBM 38500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Marketing planning and decision-making are examined from the firm and the consumer's point of view. The course content includes product differentiation, segmentation, product policy, positioning, and commercialization. The discussions involve case analyses of how these concepts have been implemented in actual business operations. Criticism will involve the effectiveness of the marketing strategies selected and the decisions that were implemented. The primary assessment involves case analyses, case presentations, and an analytical assessment of a real case scenario. Typically offered Summer Fall Spring.

**GBM 42500 - Sports Marketing**

**Prerequisite(s):** GBM 32900 FOR LEVEL UG WITH MIN. GRADE OF C OR MGMT 32300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This seminar is designed to introduce students to the complex and diverse nature of sports marketing. A framework will be presented to help explain and organize the strategic sports marketing process. Students will explore not only major league/professional sports marketing, but also minor league, collegiate, and recreational levels of the field. The student will gain an appreciation for the growing popularity of women's sports and the globalization of sports. Typically offered Fall Spring.

**GBM 47500 - Social Media Marketing And Branding**

**Prerequisite(s):** (GBM 32900 FOR LEVEL UG WITH MIN. GRADE OF C OR MGMT 32300 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 3.00. The course overviews the various uses and forms of social media, ranging from web-pages, forums, and blogs to social networking sites. Typically offered Fall Spring Summer.

**GBM 49000 - Directed Study**

Credit Hours: 1.00 to 3.00. Special subjects for investigation and experiment according to the individual student's interest and need.. Typically offered Fall Spring Summer.

**Chemistry****CHM 10000 - Preparation For General Chemistry**

**Prerequisite(s):** MA 11500 FOR LEVEL UG WITH MIN. GRADE OF C- OR APPL FOR MIN. SCORE OF 045

Credit Hours: 3.00. An introduction to the basic ideas and laboratory techniques of chemistry, together with relevant parts of algebra and elementary physics. Intended for those whose background does not permit them to proceed directly with a general chemistry course. Not available for credit toward graduation in the School of Science. Typically offered Fall.

**CHM 10300 - Chemistry & Society**

Credit Hours: 3.00. For students who think they hate chemistry! This unique course may be used for 3 hours of lab science credit for students outside the Schools of Science, Engineering, Health Science, Technology, Agriculture and Nursing. The course offers a totally new approach to chemistry, using decision-making activities related to real-world societal issues that have important chemistry components (such as the hole in the ozone layer, nutrition, consumer products, energy and pollution). A main goal is the development of critical thinking, problem solving and writing skills. The laboratory portion is performed in small groups using common household chemicals. This course should be of greatest interest to students in the Schools of Education, Humanities and Liberal Arts.. Typically offered Summer Fall Spring.

**CHM 10600 - Chemistry Of Cooking**

Credit Hours: 3.00. This course is designed to be an experimental and hands-on approach to general and applied chemistry, as observed in cooking. Cooking is one of the oldest and most widespread applications of chemistry. Students will study how recipes work in chemical context. Cooking experiments will be done to illustrate chemical principles, not limited to extraction, denaturation, and phase changes. Typically offered Summer Fall Spring.

**CHM 11100 - General Chemistry****Prerequisite(s):** APPL FOR MIN. SCORE OF 045

Credit Hours: 3.00. Metric and S.I. Units; dimensional analysis; density; the atomic concept; elements, compounds, and mixtures; the mole concept; equations and stoichiometry; atomic structure, spectra; the periodic table; chemical bonding, gases; descriptive chemistry of the common elements. (Not available for credit toward graduation in the School of Engineering and Sciences). Prerequisite: High school algebra with minimum grade of C-. Typically offered Fall Spring.

**CHM 11200 - General Chemistry****Prerequisite(s):** CHM 1110 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Continuation of CHM 11100. Liquids and solids; solutions; chemical kinetics; equilibrium; acids and bases; oxidation and reduction; electrochemistry; descriptive chemistry of the metals and nonmetals; introduction to organic chemistry; nuclear chemistry. (Not available for credit toward graduation in the School of Engineering and Sciences). Typically offered Spring.

**CHM 11500 - General Chemistry****Prerequisite(s):** MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C- OR APPL FOR MIN. SCORE OF 060

Credit Hours: 4.00. Stoichiometry; atomic structure; periodic properties; ionic and covalent bonding; molecular geometry; gases, liquids, and solids; thermochemistry. Required of students majoring in science and students in engineering. Preparation equivalent to one year of high school chemistry is strongly recommended for students enrolling in this course. Typically offered Fall Spring Summer. CTL: IPS 1721 General Chemistry I w/lab

**CHM 11600 - General Chemistry****Prerequisite(s):** CHM 11500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 4.00. A continuation of CHM 11500. Solutions; quantitative equilibria in aqueous solution; introductory thermodynamics; oxidation-reduction and electrochemistry; chemical kinetics; qualitative analysis; crystal structure; nuclear chemistry. Typically offered Fall Spring Summer. CTL: IPS 1722 General Chemistry II w/lab

**CHM 11900 - General Chemistry****Prerequisite(s):** CHM 11100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A survey of organic chemistry and biochemistry. Intended primarily for students in the nursing program but may be taken with the consent of the instructor. Prerequisite: High school chemistry with minimum grade of C-. Typically offered Fall Spring Summer.

**CHM 19400 - Freshman Chemistry Orientation**

Credit Hours: 1.00. Designed to provide incoming chemistry majors with the academic, survival, and computational skills to make a successful transition from high school to college. Discussion of opportunities within the chemistry department including degree options, co-op program, undergraduate research, careers in chemistry, use of spreadsheet software, graphing packages, and drawing programs for chemical structures. Attendance and performance on assigned projects are the basis of the assigned grades. Typically offered Fall Spring.

**CHM 21400 - Chemistry For Elementary Education**

Credit Hours: 2.00. Principles of introductory chemistry including atoms, elements, and compounds, acids and bases, the periodic table, and chemical bonding of inorganic and organic compounds. Typically offered Fall Spring Summer.

**CHM 22400 - Introductory Quantitative Analysis**

Credit Hours: 4.00. Introduction to titrimetric, gravimetric, and instrumental methods of analysis; principles of separation processes, including chromatography; recognition and evaluation of possible sources of error. Required of students majoring in biology who do not take CHM 32100. Typically offered Spring.

**CHM 24100 - Introductory Inorganic Chemistry****Prerequisite(s):** CHM 11600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. Descriptive inorganic chemistry dealing in a systematic way with the elements and the structures, properties, and reactions of their compounds. Required of students majoring in chemistry. Typically offered Fall.

**CHM 25500 - Organic Chemistry****Prerequisite(s):** CHM 11600 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A study of aliphatic and aromatic hydrocarbons and their simple derivatives in terms of (a) structure, bonding, etc.; (b) general syntheses and reactions; and (c) a logical modern rationale for fundamental phenomena as supported by reactivity orders, orientation effects, stereochemistry, and relative rates. Recommended for biology majors. Typically offered Fall Spring.

**CHM 25501 - Organic Chemistry Laboratory**

**Prerequisite(s):** CHM 25500 FOR LEVEL UG WITH MIN. GRADE OF C- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 1.00. Laboratory experiments to accompany CHM 25500, illustrating methods of separation, instrumental methods of analysis, and the more common techniques and methods for preparing various types of organic compounds. Typically offered Fall Spring.

### **CHM 25600 - Organic Chemistry**

**Prerequisite(s):** CHM 25500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A continuation of CHM 25500 with various functional groups such as the carboxyl, amino, etc., and including such polyfunctional natural products as carbohydrates and peptides. Typically offered Fall Spring.

### **CHM 25601 - Organic Chemistry Laboratory**

**Prerequisite(s):** CHM 25501 FOR LEVEL UG WITH MIN. GRADE OF C- AND CHM 25600 FOR LEVEL UG WITH MIN. GRADE OF C- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 1.00. A continuation of CHM 25501. Experiments are designed to illustrate principles discussed in CHM 25600. Typically offered Fall Spring.

### **CHM 26100 - Organic Chemistry**

**Prerequisite(s):** CHM 11600 FOR LEVEL UG WITH MIN. GRADE OF C- AND CHM 26300 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. A comprehensive study of the chemical principles underlying aliphatic and aromatic compounds. The syntheses and reactions of these materials are discussed. Modern theory and stereochemistry are stressed to illustrate the logic inherent in the subject matter and to demonstrate the predictability of many chemical transformations. Recommended for students majoring in chemical engineering. If not a chemical engineering major, see CHM 26505 Organic Chemistry. Typically offered Fall.

### **CHM 26200 - Organic Chemistry**

**Prerequisite(s):** CHM 26100 FOR LEVEL UG WITH MIN. GRADE OF D- AND CHM 26400 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. A continuation of CHM 26100, but a broader scope. The chemistry of a variety of functional groups is discussed. Theory is employed extensively to demonstrate the coherence underlying seemingly diverse transformations. Qualitative organic analysis is introduced, with particular emphasis on spectroscopic methods. Typically offered Spring.

### **CHM 26300 - Organic Chemistry Laboratory**

**Prerequisite(s):** CHM 26505 FOR LEVEL UG WITH MIN. GRADE OF C- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 1.00. Laboratory experiments designed to illustrate the lecture material of CHM 26505. Elementary laboratory techniques essential to organic chemistry are introduced followed by the actual synthesis and purification of compounds discussed in CHM 26505. Typically offered Fall.

### **CHM 26400 - Organic Chemistry Laboratory**

**Prerequisite(s):** CHM 26300 FOR LEVEL UG WITH MIN. GRADE OF C- AND CHM 26605 FOR LEVEL UG WITH MIN. GRADE OF C- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 1.00. A continuation of CHM 26300 in that the experiments are designed to illustrate principles discussed in CHM 26605. A major portion of the course is devoted to methods employed in organic qualitative analysis. The student is expected to identify several unknown compounds and mixtures. Typically offered Spring.

### **CHM 26500 - Organic Chemistry Laboratory**

**Prerequisite(s):** CHM 26100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 2.00. Similar to CHM 26300 except that a larger number and more sophisticated organic syntheses are required. The preparations are designed not only to illustrate the classical reactions discussed in CHM 26100, but to allow for an extrapolation of the principles involved to other systems. Typically offered Fall.

### **CHM 26505 - Organic Chemistry**

**Prerequisite(s):** CHM 11600 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A comprehensive study of the chemical principles underlying aliphatic and aromatic compounds. The syntheses and reactions of these materials are discussed. Modern theory and stereochemistry are stressed to illustrate the logic inherent in the subject matter and to demonstrate the predictability of many chemical transformations. Recommended for students majoring in chemistry. Typically offered Fall.

### **CHM 26600 - Organic Chemistry Laboratory**

Credit Hours: 2.00. A continuation of CHM 26500. All experiments are designed to illustrate the principles discussed in CHM 26200. A major portion of the course is devoted to the methods employed in organic qualitative analysis. The student is expected to identify unknowns and mixtures and is introduced to some modern instrumental techniques. Typically offered Spring.

### **CHM 26605 - Organic Chemistry**

**Prerequisite(s):** CHM 26505 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A continuation of CHM 26505, but a broader scope. The chemistry of a variety of functional groups is discussed. Theory is employed extensively to demonstrate the coherence underlying seemingly diverse transformations. Qualitative organic analysis is introduced, with particular emphasis on spectroscopic methods. Typically offered Spring.

### **CHM 27300 - Introductory Physical Chemistry**

**Prerequisite(s):** MA 22400 FOR LEVEL UG WITH MIN. GRADE OF D (MAY BE TAKEN CONCURRENTLY) AND PHYS 22100 FOR LEVEL UG WITH MIN. GRADE OF D (MAY BE TAKEN CONCURRENTLY) AND CHM 11600 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. An introductory treatment of the general properties of gases, liquids, and solids, with an emphasis on applications of physical chemistry in real systems. This course may be used by pre-medical, pre-dental, biology, and technology students. Typically offered Fall Spring Summer.

### **CHM 29000 - Selected Topics In Chemistry For Lower-Division Students**

Credit Hours: 1.00 to 4.00. Selected Topics In Chemistry For Lower Division Students Undergraduate special work, such as an individual project, not covered in the courses. Typically offered Fall Spring Summer.

### **CHM 29400 - Sophomore Chemistry Seminar**

**Prerequisite(s):** CHM 26505 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 1.00. Discussion of undergraduate research opportunities, upper-division courses, career opportunities, laboratory safety, use of the library and chemical information, and topics of current interest in chemistry. Required of sophomores majoring in any chemistry curriculum. Typically offered Fall.

### **CHM 31700 - Bioanalytical Chemistry**

**Prerequisite(s):** CHM 11600 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Principles and applications of various analytical instruments as applied to biological molecules, including spectroscopy, chromatography and immunoassay, will be discussed. Quantitative and qualitative analysis of biological molecules such as peptides, proteins and toxins will be performed using analytical instruments. Typically offered Fall Spring Summer.

### **CHM 31800 - Biomolecular NMR Spectroscopy/Magnetic Resonance Imaging**

**Prerequisite(s):** CHM 33300 FOR LEVEL UG WITH MIN. GRADE OF C- AND (CHM 26605 FOR LEVEL UG WITH MIN. GRADE OF C- OR CHM 25600 FOR LEVEL UG WITH MIN. GRADE OF C-) AND (PHYS 25100 FOR LEVEL UG WITH MIN. GRADE OF C- OR PHYS 26100 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 3.00. Designed for biotechnology, biology and chemistry majors. Topics will include: theory and modern experimental applications of proton nuclear resonance (H-NMR) spectroscopy, as needed for structural elucidation of biomolecules; H-NMR spectroscopy in tow, three, and four dimensions; and Magnetic Resonance Imaging (MRI) and its uses in diagnostic medicine. Typically offered Fall Spring Summer.

### **CHM 32000 - Introduction To Biochemical Techniques**

**Prerequisite(s):** CHM 25600 AND CHM 23100

Credit Hours: 2.00. A survey of the theoretical basis and practice application of modern biochemical techniques including separation, qualitative analysis, and quantitative analysis methods. Typically offered Fall Spring Summer.

### **CHM 32100 - Analytical Chemistry I**

**Prerequisite(s):** CHM 11600 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 4.00. Quantitative measurements on complex chemical systems that show matrix effects or require isolation of a component prior to its determination; general approaches to quantitative problems at the trace level; critical comparisons of competitive procedures with emphasis on principles of separation processes, including chromatography; recognition and evaluation of possible sources of error; approaches for optimizing conditions so as to minimize time and/or effort required to attain prescribed levels of accuracy and precision. Typically offered Fall.

### **CHM 32400 - Survey of Environmental Chemistry**

**Prerequisite(s):** CHM 25500 FOR LEVEL UG WITH MIN. GRADE OF C- OR CHM 26505 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course focuses on the chemicals, chemical principles and chemical phenomena of environmental consequence. Topics include ozone depletion, greenhouse effect, air pollution, water pollution, acid rain, toxic chemicals, energy flow, and environmental technology. Typically offered Fall Spring Summer.

### **CHM 33300 - Principles Of Biochemistry**

**Prerequisite(s):** (CHM 26505 FOR LEVEL UG WITH MIN. GRADE OF C- OR CHM 25500 FOR LEVEL UG WITH MIN. GRADE OF C-) AND (CHM 26605 FOR LEVEL UG WITH MIN. GRADE OF C- (MAY BE TAKEN CONCURRENTLY) OR CHM 25600 FOR LEVEL UG WITH MIN. GRADE OF C- (MAY BE TAKEN CONCURRENTLY) )

Credit Hours: 3.00. Structure and function of biologically important molecules. Intended for students in life sciences. Typically offered Fall Spring.

### **CHM 34200 - Inorganic Chemistry**

**Prerequisite(s):** CHM 26605 FOR LEVEL UG WITH MIN. GRADE OF C- OR CHM 25600 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Interpretation and correlation of the reactions and properties of inorganic compounds in terms of their electronic and molecular structures. A survey of the preparations and reactivities of important compounds of the representative elements, with an emphasis on group trends. The elementary chemistry of the transition metals, including magnetic and spectral properties of coordination compounds. Typically offered Spring.

### **CHM 34201 - Inorganic Chemistry Laboratory**

**Prerequisite(s):** CHM 34200 FOR LEVEL UG WITH MIN. GRADE OF C- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 1.00. Laboratory work to accompany CHM 34200. Typically offered Spring.

### **CHM 34300 - Inorganic Chemistry Laboratory**

**Prerequisite(s):** CHM 34200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 1.00. Laboratory work to accompany CHM 34200. Typically offered Fall Spring Summer.

### **CHM 35000 - Coatings And Resins**

**Prerequisite(s):** CHM 25600 FOR LEVEL UG WITH MIN. GRADE OF C- OR CHM 26605 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course provides a background in coatings technology and resins, including types, composition, additives, and methods of application. Typically offered Fall Spring.

### **CHM 37200 - Physical Chemistry**

**Prerequisite(s):** (MA 22400 FOR LEVEL UG WITH MIN. GRADE OF C- OR MA 16900 FOR LEVEL UG WITH MIN. GRADE OF C-) AND PHYS 22100 FOR LEVEL UG WITH MIN. GRADE OF C- AND CHM 32100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 4.00. Principles of physical chemistry with emphasis on chemical thermodynamics and kinetics, illustrated examples from the biological sciences. Intended primarily for students in the life sciences. Typically offered Spring.

### **CHM 37300 - Physical Chemistry**

**Prerequisite(s):** CHM 26605 FOR LEVEL UG WITH MIN. GRADE OF C- AND PHYS 25100 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 26100 FOR LEVEL UG WITH MIN. GRADE OF C- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. Physical chemistry of matter. Properties of gases, liquids, and solids; equations of state; thermodynamics; energy, heat, and work; entropy; spontaneity and equilibrium; chemical potential; chemical equilibrium; phase diagrams; colligative properties. Typically offered Summer Fall.

### **CHM 37400 - Physical Chemistry**

**Prerequisite(s):** CHM 37300 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 26100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Physical chemistry of molecules. Wave properties of matter; quantum mechanics of translation, rotation, and vibration; atomic structure; molecular orbitals; quantum states; statistical mechanics; chemical kinetics; collision theory; transition state theory. Typically offered Spring.

### **CHM 37600 - Physical Chemistry Laboratory**

**Prerequisite(s):** CHM 37300 FOR LEVEL UG WITH MIN. GRADE OF C- AND CHM 37400 FOR LEVEL UG WITH MIN. GRADE OF C- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 2.00. Laboratory portion of CHM 37300 and 37400. Typically offered Fall Spring.

### **CHM 42000 - Laboratory In Molecular Biochemistry**

**Prerequisite(s):** CHM 33300 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 24100 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 24200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A laboratory-grounded course to develop the skills and techniques for characterizing and manipulating proteins and nucleic acids. Typically offered Fall Spring.

### **CHM 42400 - Analytical Chemistry II**

**Prerequisite(s):** CHM 32100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 4.00. Principles and application of optical and electrical methods of chemical analysis, including topics in instrumentation. Typically offered Fall.

### **CHM 42500 - Molecular Modeling And Visualization**

**Prerequisite(s):** CHM 25600 FOR LEVEL UG WITH MIN. GRADE OF D OR CHM 26200 FOR LEVEL UG WITH MIN. GRADE OF D OR CHM 26605 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Principles and applications of current theoretical and computational methods in molecular modeling. Advanced visualization methods will be used to study molecular structure. Typically offered Fall Spring Summer.

### **CHM 42800 - Catalysis**

**Prerequisite(s):** CHM 26605 FOR LEVEL UG WITH MIN. GRADE OF C- OR CHM 25600 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Catalysts are materials which speed up chemical reactions without changing or consuming the catalyst itself in the process. They also provide selectivity or specificity to particular products which are more desirable than others. This course will focus on understanding the principles of homogeneous, heterogeneous and enzymatic catalysis, will include applications of catalysis in environmentally sustainable processes. Typically offered Fall Spring Summer.

### **CHM 46200 - Intermediate Organic Chemistry**

**Prerequisite(s):** CHM 25600 FOR LEVEL UG WITH MIN. GRADE OF C- OR CHM 26605 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Theory and application of organic chemistry and reaction mechanisms to organic synthesis and contemporary research topics in closely related areas. Topics include stereochemistry, reactive organic intermediates, molecular orbital theory, photochemistry, organic materials chemistry, and chemical biology. Typically offered Spring.

### **CHM 46300 - Medicinal Chemistry**

**Prerequisite(s):** CHM 26605 FOR LEVEL UG WITH MIN. GRADE OF C- OR CHM 25600 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Topics include basic medicinal chemistry principles, synthesis of selected drugs, a survey of drug development, and drug design. Typically offered Fall Spring Summer.

### **CHM 46400 - Polymer Chemistry**

**Prerequisite(s):** CHM 25600 FOR LEVEL UG WITH MIN. GRADE OF C- OR CHM 26605 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An introduction to the synthesis, characterization, and physical properties of high molecular weight polymers. The reactions, thermodynamics, and kinetics of polymerization as well as the physical characterization, the molecular structure, and the fabrication of polymers will be discussed. Typically offered Fall Spring Summer.

### **CHM 46401 - Polymer Chemistry Lab**

**Prerequisite(s):** CHM 26400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 1.00. This course covers basic experimental methods in polymer science, including synthesis, characterization and investigation of structure/property relationships. Typically offered Fall Spring Summer.

### **CHM 46500 - Synthetic Organic Chemistry**

**Prerequisite(s):** CHM 26605 FOR LEVEL UG WITH MIN. GRADE OF C- OR CHM 25600 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Topics include the development of synthetic strategies for preparing a variety of organic molecules,

the use of protecting groups, enolate chemistry as a key method for forming CC bonds, functional group transformations, and other synthetic methods. Typically offered Fall Spring Summer.

### **CHM 48100 - Environmental Chemistry**

**Prerequisite(s):** CHM 32100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Survey of chemical aspects of environmental problems and the application of chemistry to their solution. Topics will include atmospheric pollution problems, groundwater pollution and waste disposal problems, inorganic water pollutants, and the occurrence and fate of toxic organic compounds and other substances in the environment. Typically offered Spring.

### **CHM 48900 - Structural Biochemistry And Bioinformatics**

**Prerequisite(s):** CHM 33300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An introduction to the fundamental theories and practices of computational biological chemistry and bioinformatics. Topics covered include: molecular modeling, database design and theory, accessing genomic and proteomic information, data sources and tools for data mining, identifying protein and DNA informational patterns, and methods linking genome data to gene function. Typically offered Fall Spring.

### **CHM 49000 - Selected Topics In Chemistry For Upper-Division Students**

Credit Hours: 1.00 to 4.00. Topics vary. Typically offered Fall Spring Summer.

### **CHM 49400 - Junior-Senior Chemistry Seminar**

**Prerequisite(s):** CHM 29400 FOR LEVEL UG WITH MIN. GRADE OF C- AND CHM 49800 FOR LEVEL UG WITH MIN. GRADE OF C- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 1.00. Major emphasis on developing skills in oral and written presentations by students. The subject matter can be library material and/or accomplishments in undergraduate or co-op research. Typically offered Spring.

### **CHM 49800 - Research In Chemistry**

Credit Hours: 0.00 to 5.00. Undergraduate research, which will qualify as an Experiential Learning experience. Admission by special permission. Permission of instructor required. Typically offered Fall Spring Summer.

### **CHM 49900 - Special Assignments**

Credit Hours: 1.00 to 5.00. Undergraduate research. Individual research projects undertaken under faculty direction. Permission of instructor required. Typically offered Fall Spring.

### **CHM 50200 - Modern Chemistry In The High School**

Credit Hours: 3.00. A critical discussion of the means by which the fundamentals of modern chemistry can best be introduced at the high school level. The laboratory will deal with the manufacture and use of lecture demonstration equipment, the use of films and film strips, and the problems involved in organizing and running a high school chemical laboratory. Typically offered Spring.

### **CHM 51300 - Chemical Literature**

**Prerequisite(s):** CHM 25600 FOR LEVEL UG WITH MIN. GRADE OF B- (MAY BE TAKEN CONCURRENTLY) AND CHM 32100 FOR LEVEL UG WITH MIN. GRADE OF B- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 1.00. Types of information in technical publications; exercises in finding, assembling, and using such data. Typically offered Spring.

### **CHM 53300 - Introductory Biochemistry**

Credit Hours: 3.00. A rigorous one-semester introduction to biochemistry. Typically offered Fall.

### **CHM 53400 - Introductory Biochemistry**

**Prerequisite(s):** CHM 53300 FOR LEVEL GR WITH MIN. GRADE OF B-

Credit Hours: 3.00. Continuation of CHM 53300 with emphasis on enzymatic catalysis and metabolic transformations. Typically offered Fall Spring Summer.

### **CHM 53500 - Biochemistry Laboratory**

Credit Hours: 1.00. Laboratory component for Biochemistry. Typically offered Fall Spring Summer.

### **CHM 54800 - Radiochemistry**

**Prerequisite(s):** CHM 37400 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. Nuclear properties, structure, and reactions; radioactive decay; interaction of radiation with matter; radioactivity in the environment; nuclear applications in chemistry. Typically offered Spring.

### **CHM 56100 - Fundamental Organic Chemistry**

Credit Hours: 3.00. A general survey of synthetic organic chemistry including some discussion of current organic theory. Should be preceded by elementary organic chemistry. Typically offered Fall.

### **CHM 56300 - Organic Chemistry**



**Prerequisite(s):** CHM 26200 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. Ionic and free radical reactions are discussed critically with emphasis on the synthetic and mechanistic aspects of the reactions studies. Typically offered Spring.

### **CHM 59900 - Special Assignments**

Credit Hours: 1.00 to 4.00. Directed reading or special work not included in other courses. Permission of instructor required. Typically offered Fall Spring Summer.

## **Child Development and Family Studies**

### **CDFS 21100 - Development And Growth Of Children**

Credit Hours: 3.00. Study of the growth and development of children from birth through adolescence. Emphasis on physical growth, emotional and social behavior, cognitive and language development within contexts of family, school, and peer groups. Focus on observational methods. Typically offered Fall Spring.

### **CDFS 25500 - Introduction To Couple And Family Relationships**

Credit Hours: 3.00. Provides further understanding of family relations for those unmarried, those contemplating marriage, or for those married, and for prospective marriage counselors. A functional approach to the interpersonal relationships of courtship, marriage, and family. Typically offered Fall Spring.

### **CDFS 31200 - Adult Development**

Credit Hours: 3.00. An in-depth study of developmental processes from the transition to adulthood through old age. Particular emphasis is placed on understanding the influence of contexts on adult development. Typically offered Fall Spring.

### **CDFS 31300 - Adolescent Development**

Credit Hours: 3.00. An overview of the normative developmental issues and concerns of the adolescent, with some attention given to problem behavior. Typically offered Fall Spring.

### **CDFS 33200 - Stress Points In Contemporary Families**

Credit Hours: 3.00. Examines theoretical perspectives related to family stress and resilience and connects these perspectives to empirical work on family dynamics and dysfunction across the lifespan. Problems associated with family formation, parent-child relations, family care giving, and families in remarriage as well as contemporary family relations thought to be challenges themselves such as divorce, incest, and family violence are explored. Typically offered Fall Spring.

### **CDFS 33400 - Aging And The Family**

Credit Hours: 3.00. Aging in the family context: roles, relationships, and conditions of life in the family during later stages; intergenerational relations; policy and practice issues. Typically offered Fall.

### **CDFS 39000 - Special Topics In CDFS**

Credit Hours: 1.00 to 6.00. Supervised readings, discussion, lectures and/or research on special topics in family and individual development. Permission of instructor required. Typically offered Summer Fall Spring.

### **CDFS 58600 - Seminar In Human Development And Disability**

Credit Hours: 3.00. The Seminar on Human Development and Disability will expose students to multiple perspectives related to the issues in human development and disability related issues. The purpose of the course is to provide an interdisciplinary experience for students preparing for work in the human services. Each class has a variety of professionals present on a topic they have expertise in (i.e. Autism, diagnostics, speech disabilities) and allows students to gain more in-depth knowledge about each topic and ask questions. There will be three scheduled field trips to allow students field experience in a human service agency including Riley Child Development Center in Indianapolis, IN., First Steps in Crown Point, IN., and Opportunity Enterprises in Valparaiso, IN will be visited during the afternoon hours for two of the scheduled meeting days. Typically offered Fall Spring Summer.

### **CDFS 59000 - Special Problems**

Credit Hours: 0.00 to 5.00. Special subjects for investigation and experiment according to the individual student's interest and need. Permission of instructor required. Typically offered Fall Spring.

### **CDFS 60100 - Advanced Child Development**

Credit Hours: 3.00. This course provides an overview of foundational and current developmental research on changes that occur within the individual throughout infancy, childhood, and early adolescence. Emphasis is given to processes and mechanisms that have been proposed to explain developmental changes. This course includes attention to social and cultural contexts within which individuals develop. Prerequisite: Graduate level course work in Child Development or Psychology. Typically offered Fall Spring.

### **CDFS 60200 - Advanced Family Studies**

Credit Hours: 3.00. Integrative and comprehensive assessment of both classic and recent contributions in the field of family studies. Other topics include major theory and research, historical, current, and future critical issues in family studies. Prerequisite: 12 hours of social sciences including six hours of advanced undergraduate courses preparing student for the study of the family. Typically offered Fall Spring.

### **CDFS 60300 - Theories Of Family Therapy**

Credit Hours: 3.00. An examination of the history of family therapy, major family therapy theorists, and therapy treatment modalities. Prerequisite: Graduate level course work in Child Development. Typically offered Fall Spring.

### **CDFS 61500 - Research Methods In Child And Family Study**

Credit Hours: 4.00. Basic research methods employed in the study of children and families are examined, including quantitative and qualitative designs, data collection, analysis, and interpretation. In the laboratory component, students are afforded supervised practice in the application of various methods using selected statistical analysis programs. Prerequisite: Graduate course in Statistics. Permission of instructor required. Typically offered Fall Spring.

### **CDFS 61800 - Program Development And Evaluation**

Credit Hours: 3.00. The course will acquaint students with the life cycle of interventions deployed by a variety of organizations including human services, public administration, and non-profits. Program development emphases include needs assessment, the replication of evidence-based practice, theory of change and the use of logic methods, and grant writing. Program evaluation emphases include theoretical approaches to evaluation, the use of data and measures, and exposure to both formative and summative approaches to program evaluation. Typically offered Fall Spring Summer.

### **CDFS 64100 - Trauma And Recovery In Family Therapy**

Credit Hours: 3.00. In this course graduate students will critically examine theories and research on the manifestations of trauma on the individual and the family. Systemic and relational influences on recovery from trauma will be highlighted. Family therapy interventions for trauma treatment will be presented. Typically offered Summer.

### **CDFS 64300 - Children In Family Therapy**

Credit Hours: 3.00. This course introduces the graduate student to the professional clinical skills and techniques utilized when working with children and adolescents in the context of family therapy. Graduate Student standing required. Typically offered Summer.

### **CDFS 65700 - Social Constructionist Family Therapies**

Credit Hours: 3.00. Investigation of theory, research, and practice of constructivist and social constructionist family therapies. Readings include a wide range of original work by major theorists, such as White, deShazer, and Anderson & Goolishian. Typically offered Fall Spring.

### **CDFS 66000 - Family Therapy Skills**

Credit Hours: 3.00. Training of basic family therapy skills. Procedures are applied in practice groups and analogue situations. Typically offered Fall.

### **CDFS 66300 - Structural And Strategic Family Therapies**

Credit Hours: 3.00. Investigation of theory, research, and practice of structural and strategic family therapies. Readings will include a wide range of the original works of major theorists such as Erickson, Minuchin, Haley, Watzlawick, and Palazzoli. Typically offered Fall Spring Summer.

### **CDFS 66500 - Transgenerational And Specialized Family Therapies**

Credit Hours: 3.00. Investigation of theory, research, and practice of transgenerational and specialized family therapies. Readings will include a wide range of original works of the major theorists. Prerequisite: CDFS 60300. Typically offered Spring.

### **CDFS 66700 - Practicum In Marriage Counseling**

Credit Hours: 3.00. Supervised counseling experience in working with premarital and marital problems. Permission of instructor required. Typically offered Fall Spring Summer.

### **CDFS 66900 - Practicum In Family Therapy**

Credit Hours: 3.00. Supervised counseling experience in family therapy. Typically offered Fall Spring Summer.

### **CDFS 67100 - Sex Therapy**

**Prerequisite(s):** CDFS 67000 FOR LEVEL GR WITH MIN. GRADE OF B-

Credit Hours: 3.00. Examination of the literature, research, and theories related to therapeutic interventions for sexual concerns in relationships. Particular attention is given to systemic approaches and to the relationship between marital and sex therapy. Prerequisite: CDFS 67000. Permission of instructor required. Typically offered Fall Spring.

### **CDFS 67800 - Externship In Marriage And Family Therapy**

Credit Hours: 1.00 to 6.00 (West Lafayette) 3.00 to 9.00 (Calumet) Supervised clinical experience in marriage and family therapy at an approved externship site. Depending on the number of credit hours for which one is registered, will require 8-24 clinic hours and 3-9 experiential hours per week. Prerequisite: CDFS 66700, 66900. Permission of instructor required. Typically offered Fall Spring Summer.

### **CDFS 68000 - Professional Issues For Child And Family Specialists**

Credit Hours: 3.00. Professional issues involved in working with children and families. Questions of ethics, legal relationships, and value problems may be pursued, as may such pragmatic inquiries as the role of professional organizations and labor unions in these fields. Typically offered Fall Spring.

### **CDFS 69800 - Research MS Thesis**

Credit Hours: 1.00 to 18.00. Research MS Thesis. Permission of instructor required. Typically offered Fall Spring Summer.

## **Chinese**

### **CHNS 10100 - Chinese Level I**

Credit Hours: 4.00. A comprehensive course in elementary Mandarin, designed to develop basic proficiency in listening, speaking, reading, and writing. Systematic coverage of syntactical patterns. After oral foundation work, 20 characters are introduced each lesson in unsimplified and simplified forms. Typically offered Summer Fall Spring.

### **CHNS 10200 - Chinese Level II**

**Prerequisite(s):** CHNS 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. A continuation of the study of elementary Mandarin. Students will complete study of basic syntactical patterns. Character recognition will be built to 500. Typically offered Summer Fall Spring.

## **Civil Engineering**

### **CE 11500 - Engineering Drawing I**

Credit Hours: 1.00. (ME 11500) A technical drawing course covering engineering geometry, orthographic projection, auxiliary views, dimensioning, and tolerance using sketching techniques, and 2-D CAD. Credit is not allowed for both CE 11500 and ME 11500. Typically offered Summer Fall Spring.

### **CE 11600 - Engineering Drawing II**

**Prerequisite(s):** CE 11500 FOR LEVEL UG WITH MIN. GRADE OF C- OR ME 11500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 1.00. (ME 11600) A continuation of the technical drawing course covering 3-D parametric modeling, part assembly modeling, and detail and assembly drawings. Credit is not allowed for both CE 11600 and ME 11600. Typically offered Fall Spring Summer.

### **CE 20100 - Surveying And GIS**

**Prerequisite(s):** MA 16400 FOR LEVEL UG WITH MIN. GRADE OF C- AND PHYS 15200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Theory and practice of land surveying. Fundamentals of observing distances, elevations, and angles. Analysis of errors in surveying measurements. Computation of irregular areas. Circular and parabolic curves. Earth-work estimates. Computer applications, photogrammetry, geographic information systems (GIS) and global positioning systems (GPS) technologies.. Typically offered Fall Spring.

### **CE 20400 - Civil Engineering Materials**

**Prerequisite(s):** (MA 15900 FOR LEVEL UG WITH MIN. GRADE OF C- OR MA 15400 FOR LEVEL UG WITH MIN. GRADE OF C- OR APPL FOR MIN. SCORE OF 085) AND CHM 11500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course provides an introduction to the use, specification and test of common civil engineering construction materials such as steel, aluminum, aggregates, Portland cement concrete, asphalt cement concrete, constituents of masonry, fiber reinforced plastics (FRP's) and timber. Practical behaviors of these materials systems will be emphasized. An understanding of these behaviors will be approached through examination of the materials characteristics. This course will provide introductory details of composites. Typically offered Fall Spring Summer.

### **CE 23200 - Engineering Geology**

**Prerequisite(s):** ENGR 18100 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHYS 15200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Methods of surface and subsurface exploration for site characterization; engineering properties of rocks and soil in practices. Topics include structural failures in rock and soils, ground water, land subsidence, earthquakes, weathering, civil, mining and petroleum engineering related design and environmental problems. Typically offered Fall Spring Summer.

### **CE 27100 - Basic Mechanics I**

**Prerequisite(s):** ENGR 18100 FOR LEVEL UG WITH MIN. GRADE OF D- AND MA 26100 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. Loads; structural forms; analysis of axially loaded members, flexural members, torsional members; combined loading conditions; buckling. Basic behavioral characteristics of structural elements and systems illustrated by laboratory experiments. Typically offered Summer Fall Spring.

### **CE 27101 - Basic Mechanics I (Statics)**

**Prerequisite(s):** MA 16300 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 16400 FOR LEVEL UG WITH MIN. GRADE OF C- AND PHYS 15200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. (ME 27100) Review of vector algebra and equilibrium. Hydrostatics, virtual work, static stability, friction. First and second moments of areas, volumes, and masses, center of gravity. Credit is not allowed for both CE 27101 and ME 27100. Typically offered Fall Spring Summer.

### **CE 27300 - Mechanics Of Materials**

**Prerequisite(s):** MA 26100 FOR LEVEL UG WITH MIN. GRADE OF C- AND (ME 27100 FOR LEVEL UG WITH MIN. GRADE OF C- OR CE 27101 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 3.00. Analysis of stress and strain, Mohr's circle, equations of equilibrium and compatibility; stress-strain laws; extension torsions, bending and deflection of beams, buckling of columns, elastic stability and strain energy, Castigliano's Theorem, pressure vessels, selected topics. Typically offered Summer Fall.

### **CE 27301 - Mechanics Of Materials Laboratory**

**Prerequisite(s):** CE 27300 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 16400 FOR LEVEL UG WITH MIN. GRADE OF C AND MA 26100 FOR LEVEL UG WITH MIN. GRADE OF C AND PHYS 15200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 1.00. This lab will demonstrate the basic principles of strength of materials. Students will conduct tension tests, torsion tests, and learn to use strain gages with data acquisition systems to conduct experiments such as finding modulus of elasticity and Poisson's ratio, stress concentration, principal stress, and strain and deflection of beams. Typically offered Fall Spring Summer.

### **CE 27500 - Basic Mechanics II (Dynamics)**

**Prerequisite(s):** MA 26100 FOR LEVEL UG WITH MIN. GRADE OF C- AND (CE 27101 FOR LEVEL UG WITH MIN. GRADE OF C- OR ME 27100 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 3.00. (ME 27500) Fundamental concepts, kinematics, translation and rotation. Kinetics impulse, momentum, work, energy. Rectilinear and curvilinear translation of point masses. Plane motion of rigid bodies and vibration. Credit is not allowed for both CE 27500 and ME 27500. Typically offered Fall Spring Summer.

### **CE 30300 - Engineering Surveying**

**Prerequisite(s):** CE 27100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ME 27000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Horizontal and vertical control surveys on site and route projects for engineering design and construction layout. Geometric design of horizontal circular curves, spiral easement curves, and vertical parabolic curves. Earthwork volume computation and balancing. Use of coordinate geometry (COGO) design software including terrain and design surface modeling. Methods and tools used for construction layout, as-built surveys, and industrial measurements. Typically offered Spring.

### **CE 30800 - Construction Engineering Management**

**Prerequisite(s):** CE 27300 FOR LEVEL UG WITH MIN. GRADE OF C AND CE 20400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Introduction to the construction industry, phases in construction projects, construction contracts and legal structures, construction planning and scheduling, construction estimation, project cash flow, labor relations, construction equipment management, quality management, and construction safety. Typically offered Fall Spring Summer.

### **CE 31200 - Fluid Mechanics**

**Prerequisite(s):** MA 26400 FOR LEVEL UG WITH MIN. GRADE OF C- AND (CE 27500 FOR LEVEL UG WITH MIN. GRADE OF C- OR ME 27500 FOR LEVEL UG WITH MIN. GRADE OF C-) AND ME 30500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. (ME 31200) Continuum, velocity field, fluid statics, basic conservation laws for systems and control volumes, dimensional analysis, Euler and Bernoulli equations, viscous flows, boundary layer flow in channels and around submerged bodies, one-dimensional gas dynamics. Credit is not allowed for both CE 31200 and ME 31200. Typically offered Fall Spring Summer.

### **CE 31300 - Fluid Mechanics Lab**

**Prerequisite(s):** CE 31200 FOR LEVEL UG WITH MIN. GRADE OF C- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 1.00. (ME 31300) Introduction to fluid mechanics laboratory, experiments on flow patterns, velocity profile in an air pipe, wind tunnel calibration, draining of a tank, pipe friction, boundary layer studies, falling ball

experiments, and viscosity measurements. Credit is not allowed for both CE 31300 and ME 31300. Typically offered Fall Spring Summer.

### **CE 32200 - Introduction To Construction Engineering**

**Prerequisite(s):** CE 27300 FOR LEVEL UG WITH MIN. GRADE OF C- AND ME 31100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Introduction to project planning and management -- U.S. construction industry practice, organization of construction firms, cost of construction projects, cost estimating, quantity takeoff. Topics will include equivalence, present worth, uniform annual cost, depreciation, documents, contracts, and management project scheduling inspection. Typically offered Fall Spring Summer.

### **CE 32300 - Soil Engineering**

**Prerequisite(s):** CE 31200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Introduction to soil engineering and testing. Identification and classification tests, soil water systems, settlement principles, soil stresses, and shear strength testing.. Typically offered Fall Spring.

### **CE 32401 - Mechanics Of Materials**

**Prerequisite(s):** ME 27400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. (ME 32401) Integrated approach to mechanics of materials emphasizing mechanics fundamentals as applied to machine design applications. Stress and strain in machine elements, mechanical properties of materials; extension, torsion, and bending of members; thermal stress; pressure vessels; static indeterminacy, stress transformation, Mohr's circle. Typically offered Fall Spring Summer.

### **CE 32500 - Elementary Structural Analysis**

**Prerequisite(s):** ME 27000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Analysis of determinate and indeterminate systems, including beams, trusses, frames, and arches by classical methods. Energy theorems and the beam theory are used to find out the displacement at a specific point in the system. Typically offered Fall Spring.

### **CE 32800 - Mechanics Of Materials Lab**

**Prerequisite(s):** ME 27400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 1.00. (ME 32800) Experimental approach to mechanics of materials emphasizing mechanics fundamentals as applied to machine design applications. Experiments cover stress and strain in machine elements; mechanical properties of materials; extension, torsion, and bending of members; thermal stress; pressure vessels; static indeterminacy, stress transformation, Mohr's circle. Typically offered Fall Spring.

### **CE 33001 - Structure And Properties Of Materials**

**Prerequisite(s):** (ME 32401 FOR LEVEL UG WITH MIN. GRADE OF D- OR CE 32401 FOR LEVEL UG WITH MIN. GRADE OF D-)

Credit Hours: 3.00. (ME 33001) The relationship between the structure of materials and the resulting mechanical, thermal, electrical, and optical properties. Atomic structure, bonding, atomic arrangement, crystal symmetry, crystal structure, habit, lattices, defects, and the use of X-ray diffraction. Phase equilibria and microstructural development. Applications to design. Typically offered Fall Spring Summer.

### **CE 33400 - Structural Analysis I**

**Prerequisite(s):** CE 27300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Loads, shear, moment, and deflected shape diagrams for beams and framed structures. Approximate methods. Calculations of deformations. Using flexibility methods to analyze frames and continuous beams. Using moment distribution and stiffness methods to analyze continuous beams and braced frames. Influence lines for determinate and indeterminate beams using Muller-Breslau principle. Computer applications to analyze beams and frames.. Typically offered Fall Spring.

### **CE 34200 - Engineering Hydrology and Hydraulics**

**Prerequisite(s):** CE 31200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ME 31200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Introductory concepts, precipitation. Evaporation and transpiration. Interception and infiltration. Surface runoff, groundwater, and streamflow. Hydrograph analysis. Applied hydraulics including pipe and channel flow with design applications in culverts, pumping, water distribution, storm and sanitary sewer systems.. Typically offered Fall Spring.

### **CE 35100 - Introduction To Transportation Engineering**

**Prerequisite(s):** STAT 34500 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND (ME 31200 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) OR CE 31200 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) )

Credit Hours: 3.00. Planning and operations of transportation facilities. Vehicle, operation, and infrastructure characteristics. Technological, economic, and environmental factors. Travel demand modeling and capacity analysis.. Typically offered Fall Spring.

### **CE 35400 - Introduction To Environmental Engineering**

**Prerequisite(s):** CE 31200 FOR LEVEL UG WITH MIN. GRADE OF C- (MAY BE TAKEN CONCURRENTLY) OR ME 31200 FOR LEVEL UG WITH MIN. GRADE OF C- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. Introduction to air and water pollution, noise, and hazardous and solid wastes; consideration of treatment and management issues. Typically offered Fall Spring Summer.

### **CE 40400 - Finite Element Analysis**

**Prerequisite(s):** MA 26400 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 26500 FOR LEVEL UG WITH MIN. GRADE OF C- AND CE 27300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. (ME 40400) Brief history of finite element method and ANSYS; direct formulation; minimum total potential energy formulation; verification of results; trusses. Examples using ANSYS, one-dimensional elements. Numerical integration, Gauss Quadrature. Examples of one-dimensional elements in ANSYS; heat transfer problems; solid mechanics problems; two-dimensional elements. Pre-processing with ANSYS; boundary conditions; applications; heat conduction problems; torsion problems; beams and frames. Credit is not allowed for both CE 40400 and ME 40400. Typically offered Fall Spring Summer.

### **CE 41000 - Fluid Mechanics And Hydraulics**

**Prerequisite(s):** ME 31001 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. (ME 41000) This course is a continuation of Fluid Mechanics. Topics will include hydraulics, external boundary layer flow, and introduction to fluid power and gas dynamics. Typically offered Fall Spring Summer.

### **CE 41100 - Building Design**

**Prerequisite(s):** CE 11600 FOR LEVEL UG WITH MIN. GRADE OF C- AND CE 32300 FOR LEVEL UG WITH MIN. GRADE OF D- AND CE 33400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Structural steel and reinforced concrete building design. Analysis of structural behavior of frameworks. Systems that resist lateral loads. Use of current building codes and design specifications. Review of building designs. Preliminary and final designs including analysis of alternative structural systems, and preparation of design sketches and calculations.. Typically offered Fall Spring.

### **CE 41200 - Groundwater Hydrology**

**Prerequisite(s):** ME 31200 FOR LEVEL UG WITH MIN. GRADE OF D- AND CE 34200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Flow through porous media, occurrence of ground water, well hydraulics, flow nets. Ground water contamination, pollutant movement and unsaturated flow, Case studies. Numerical modeling techniques for ground water modeling, groundwater flow, and groundwater pollution problems in steady state conditions. Typically offered Fall Spring Summer.

### **CE 42800 - Traffic Management**

**Prerequisite(s):** CE 35100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Driver, pedestrian, and vehicular characteristics. Traffic characteristics; study of highway capacity; analyses of traffic patterns. Principles of traffic control for improved highway traffic service. Use intersection, corridor or network analysis, computer evaluation, and optimization tools. Typically offered Fall Spring.

### **CE 42900 - Senior Engineering Design I**

**Prerequisite(s):** ENGL 30700 FOR LEVEL UG WITH MIN. GRADE OF D- AND CE 20400 FOR LEVEL UG WITH MIN. GRADE OF D- AND CE 27300 FOR LEVEL UG WITH MIN. GRADE OF C- AND CE 31200 FOR LEVEL UG WITH MIN. GRADE OF D- AND CE 33400 FOR LEVEL UG WITH MIN. GRADE OF D- AND CE 35100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. (ME 42900, ECE 42900). The senior engineering design courses I and II constitute a two-semester sequence of an interdisciplinary activity. The objective of these courses is to provide engineering students with supervised experience in the process and practice of engineering design. Projects are chosen by the students or the faculty. Students working in teams pursue an idea from conception to realistic design. The course concludes with a

substantial written and oral design review before a faculty team. Class discussions will include the ethical responsibility of engineers, impact of engineering solution in a global/societal context, and small-group interactions. Typically offered Fall Spring Summer.

### **CE 43000 - Transportation Policy**

**Prerequisite(s):** CE 35100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Current concepts, theories, and issues in managing transportation organizations. Study of transportation logistics and engineering systems with an overview of the operating context, leadership challenges, strategies, and management tools that are used in today's public and private transportation organizations. Analyze alternative models of decision-making, strategic planning, stakeholder valuation and analysis, government-based regulation and cooperation within the transportation enterprise, disaster communications, systems safety, change management, and the impact of globalization.. Typically offered Fall Spring.

### **CE 43300 - Structural Dynamics I**

Credit Hours: 3.00. Introduction to structural dynamics, single-degree-of-freedom (SDF) systems, free vibration of SDF systems, response of SDF to time-varying forces (harmonic, periodic, step, pulse general), numerical evaluation of dynamic response of SDF systems, earthquake response of linear and inelastic systems. Typically offered Fall Spring Summer.

### **CE 43600 - Urban Transportation Planning and Modeling**

**Prerequisite(s):** CE 35100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Transportation data sources and cost analysis; management of transportation systems; transport legislation, transport financing; intelligent transportation systems planning; sustainable transportation concepts. Use of popular travel demand software and applications of geographic information systems (GIS) and global positioning systems (GPS).. Typically offered Fall Spring.

### **CE 43900 - Senior Engineering Design II**

**Prerequisite(s):** ME 42900 FOR LEVEL UG WITH MIN. GRADE OF D- OR CE 42900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The senior engineering design courses I and II constitute a two-semester sequence of an interdisciplinary activity. The objective of these courses is to provide engineering students with supervised experience in the process and practice of engineering design. Projects are chosen by the students or the faculty. Students working in teams pursue an idea from conception to realistic design. The course is climaxed by the presentation of a substantial written report and a formal oral presentation before faculty and students. Typically offered Fall Spring Summer.

### **CE 44500 - Water Resources System Design**

**Prerequisite(s):** ME 31200 FOR LEVEL UG WITH MIN. GRADE OF D- AND CE 34200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Application of principles of hydrology, hydraulics, and environmental engineering in the planning, design, and analysis of a comprehensive water resource project. The application of engineering concepts to the practical design of water supply, distribution, collection, and treatment facilities will be emphasized. Written and oral presentation of student projects will be required. Typically offered Fall Spring Summer.

### **CE 44600 - Water and Wastewater Treatment**

**Prerequisite(s):** CE 35400 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Overview of engineering approaches to protect water quality with an emphasis on fundamental principles. Theory and conceptual design of systems for treating municipal wastewater and drinking water. Reactor theory, process kinetics, and models. Physical, chemical, and biological processes, including sedimentation, filtration, biological treatment, disinfection, and sludge processing. Engineered and natural processes for wastewater treatment.. Typically offered Fall Spring.

### **CE 45200 - Air Pollution**

**Prerequisite(s):** CE 35400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Analysis of air pollution sources. Effects of air pollutants on human health and environment. Technologies and methods used to control air pollution. Regional and global issues such as acid rain, ozone depletion, and global climate change.. Typically offered Fall Spring.

### **CE 45301 - Engineering Rock Mechanics**

**Prerequisite(s):** ME 27400 FOR LEVEL UG WITH MIN. GRADE OF D- AND CE 41000 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. State of stress in rock, rock dynamics, rock mechanics model, finite element model, fracturing, rock mechanics design and instrumentation, introduction to rock testing method. Typically offered Fall Spring Summer.

### **CE 45501 - Design Of Earth Structures**

**Prerequisite(s):** CE 32100 FOR LEVEL UG WITH MIN. GRADE OF D- AND CE 36700 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Design of earth structures: dam, highway fills, cofferdams, etc. Embankment construction techniques, quality control, embankment analysis, instrumentation, foundation soil stabilization, seepage analysis and control. Design problems. Typically offered Fall Spring Summer.

### **CE 45800 - Solid Waste Management**

**Prerequisite(s):** CE 35400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Planning and design of solid waste management systems; includes characterization and collection of domestic, commercial, and industrial solid wastes, waste minimization and recycling, energy and materials recovery, composting, incineration, and landfill design.. Typically offered Fall Spring.

### **CE 46200 - Highway Design**

**Prerequisite(s):** CE 35100 FOR LEVEL UG WITH MIN. GRADE OF D- AND CE 33400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Introduction to traffic engineering and highway planning. Design, construction, and maintenance of highway facilities; earthwork, drainage structures; pavements. Preparation of environmental impact statement. This course has computer applications and will include completing a design project. Typically offered Fall Spring.

### **CE 47100 - Reinforced Concrete Design**

**Prerequisite(s):** CE 33400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Analysis and design of beams, one-way slabs, and columns. Design of building frames using pattern loading and moment coefficients. Typically offered Fall Spring.

### **CE 47600 - Reinforced Concrete And Steel Structures**

**Prerequisite(s):** CE 27300 FOR LEVEL UG WITH MIN. GRADE OF C- AND CE 33400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Concrete design - beams, slabs, girders, columns, and footings for building frames and bridges. Introduction to pre-stressed concrete, ultimate strength design, basic design criteria. Design of structural steel beams, columns, beam-columns, and bolted and welded connections. Introduction to design aspects of composite steel/concrete beams. Design of continuous structures. Plastic analysis. Training in computerized structural analysis and design. Typically offered Fall Spring Summer.

### **CE 48100 - Foundation Engineering**

Credit Hours: 3.00. The Foundation Engineering course focuses on geotechnical design of shallow and deep foundations and includes review of geotechnical properties of soil, subsurface exploration, seepage, bearing capacity of shallow foundations, lateral earth pressure theories, retaining walls, and deep foundations. Typically offered Fall Spring Summer.

### **CE 48200 - Engineering Risk Analysis**

**Prerequisite(s):** CE 35400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Decision making in the presence of uncertainty: reliability and probabilistic risk assessment (RPRA), decision analysis (DA), and cost-benefit analysis (CBA). Balancing risks and benefits in situations that involve human safety, potential environmental effects, and large financial and technological uncertainties. Typically offered Fall Spring.

### **CE 48500 - Environmental Law And Public Policy**

**Prerequisite(s):** CE 35400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Review and analyze federal and state regulation of air and water pollution and hazardous wastes. Analyze pollution as an economic problem and the failure of markets. Emphasize use of legal mechanisms and alternative approaches (such as economic incentives and voluntary approaches) to control pollution and to encourage chemical accident and pollution prevention. Focus on the major federal legislation, the underlying administrative system, and the common law in analyzing environmental policy, economic consequences, and the role of the courts. Discuss classical pollutants and toxic industrial chemicals, community right-to-know, and environmental justice. Also provides an introduction to basic legal skills.. Typically offered Summer Fall Spring.

### **CE 48900 - Civil Engineering Projects**



Credit Hours: 1.00 to 6.00. Projects or special topics of contemporary importance or of special interest that are outside the scope of the standard undergraduate curriculum can be studied. Interested students should seek a faculty advisor who works in the area of special interest and prepare a brief description of the work to be undertaken in cooperation with the advisor. Typically offered Fall Spring Summer.

### **CE 50910 - Watershed Management**

Credit Hours: 3.00. Watershed - Systems approach, delineation, hydrology, soil erosion, socio-economic criterion and water quality modeling, point and non-point sources, EPA and State Regulations, Total Maximum Daily Load (TMDL), Watershed management plans, rainfall runoff modeling with GIS applications, Best management practices. Typically offered Fall Spring Summer.

### **CE 53210 - Fundamentals Of Design Of Steel Girder Bridges**

Credit Hours: 3.00. This course will present a modern approach to highway bridge analysis and design based on the American Association of State Highway and Transportation Officials LRFD Bridge Design Specifications. Typically offered Fall Spring Summer.

### **CE 53410 - Geographic Information System (GIS) And Remote Sensing Applications In Civil Engineering**

Credit Hours: 3.00. GIS – Historic Development, Data Models, Geodesy, Datum, Map Projections and Coordinate Systems Review, Maps Data entry and editing, Global Navigation Satellite Systems and Coordinate Surveying, Aerial and Satellite Images, Digital Data, Spatial Analysis, Raster Analysis, Terrain Analysis, Spatial Estimation, Spatial Models and Modeling, Data Standards, and Quality, New developments in GIS, real world GIS project for decision making, Remote Sensing, Data Analysis, Radiation and Sensor systems in Remote Sensing, Pattern Recognition, Data Analysis and Noise in Remote Sensing system. Typically offered Fall Spring Summer.

### **CE 53430 - Advanced Civil Engineering Projects I**

Credit Hours: 0.00 to 12.00. Formal classroom instruction on special topics of contemporary importance of special interest or topics of current interest. Typically offered Fall Spring Summer.

### **CE 53710 - Optimization And Simulation Models**

Credit Hours: 3.00. Problem Formulation and solution for a variety of complex engineering problems, using Optimization methods, including linear programming, nonlinear programming, dynamic programming and artificial intelligence based optimization. Use of analytical techniques and computer software to solve formulated real world problems using simulation models. Typically offered Fall Spring Summer.

### **CE 53910 - Advanced Hydraulics**

Credit Hours: 3.00. Course focuses on applied concepts in Pipe distribution networks (with real world examples), network analysis, transients, Surge analysis, and open channel hydraulics – floods, channel design, sanitary sewer and storm sewer design and analysis using SWMM – water security. Typically offered Fall Spring Summer.

### **CE 57000 - Advanced Structural Mechanics**

**Prerequisite(s):** CE 27300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Studies of stress and strain, failure theories, and yield criteria; flexure and torsion theories for solid and thin-walled members; and energy methods. Typically offered Fall.

### **CE 59701 - Selected Topics In Civil Engineering**

Credit Hours: 0.00 to 6.00. Formal classroom instruction on special topics of contemporary importance of special interest or topics of current interest. Permission of instructor required. Typically offered Fall Spring Summer.

## **Civil Engineering Technology**

### **CET 10000 - Technical Computations**

Credit Hours: 3.00. A study of elements from algebra and trigonometry appropriate to surveying, estimating, statics, and other construction-related courses. Graphs and reports are included. Typically offered Fall Spring.

### **CET 10400 - Elementary Surveying**

**Prerequisite(s):** MA 14700 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Measurement of distances, directions, and angles using tape, level, theodolite, and total station. Computation of areas and traverses, lines and grades. Also, topographic surveys, an introduction to construction surveys, and an introduction to GPS measurement. Typically offered Fall Spring.

### **CET 10800 - Route Surveying And Design**

Credit Hours: 3.00. Preliminary and construction surveys for route locations Calculation and field work for simple and easement curves grade lines, and slope stakes. Preparation of plans, profiles, and cross-sections from field survey data earthwork estimates. Typically offered Fall Spring Summer.

### **CET 16000 - Statics**

**Prerequisite(s):** MA 14800 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. Study of forces acting on bodies at rest. Coplanar and non-coplanar forces, concurrent and non-concurrent forces, hydrostatic forces, centroids and moments of inertia will be studied. Typically offered Fall Spring.

### **CET 20800 - Route Surveying**

**Prerequisite(s):** CET 10400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Preliminary and construction surveys for highways and railroads, including calculation and field work for simple, compound, reverse, and easement curves, grade lines and slope stakes and the superelevation of curves. Preparation of plans, profiles and cross-sections from field survey data. Earth-work estimates. Typically offered Fall.

### **CET 20900 - Land Surveying And Subdivision**

**Prerequisite(s):** ARET 11700 FOR LEVEL UG WITH MIN. GRADE OF C- AND CET 10400 FOR LEVEL UG WITH MIN. GRADE OF C- AND CET 25300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00 or 4.00. Theory and practice of land surveying, subdivision, filing and recording deeds, United States government survey of public lands, laws of land surveying, descriptions and area computations for land surveys. Subdivision planning, calculations and plotting, water main layouts, storm and sanitary sewer calculations and layouts. Street plans and profiles. Typically offered Fall Spring.

### **CET 21000 - Surveying Computations**

**Prerequisite(s):** CET 10400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Analysis of errors in surveying measurements. Adjustments to surveying measurements, including an introduction to the least squares adjustment method. Computations using rectangular coordinates including intersections and coordinate transformations. Computations associated with horizontal and vertical control networks. Typically offered Fall Spring Summer.

### **CET 25300 - Hydraulics And Drainage**

**Prerequisite(s):** CET 16000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Basic hydrostatics, Bernoulli's equation, flow in water and sewer lines, overland and ditch drainage, and culvert size determination. Typically offered Fall.

### **CET 26000 - Strength Of Materials**

**Prerequisite(s):** CET 16000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Study of stress-strain relationships, shear and bending moment diagrams, stresses and deflections of beams, axial loads, and combined stresses. Applied problems in the field structural design. Typically offered Fall Spring.

### **CET 26600 - Materials Testing**

**Prerequisite(s):** CET 26000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Testing of construction materials to determine physical and mechanical properties. Preparation of reports from data secured from such tests. Typically offered Fall Spring.

### **CET 28000 - Structural Calculations**

**Prerequisite(s):** CET 26000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Practice in the calculation of loads, reactions, shear, and moment for determinate structures. Analysis and design of steel structural members subjected to tension, compression, bending and combined stresses. Typically offered Fall Spring.

### **CET 29900 - Civil Engineering Technology**

Credit Hours: 1.00 to 4.00. This is a variable course. Subject matter to be assigned by the staff. Primarily for third and fourth semester students. Typically offered Fall Spring.

### **CET 30300 - Land Survey Systems**

**Prerequisite(s):** CET 10400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A study of ancient land survey systems which affected surveying in the United States, including metes and bounds systems. History and use of the United States Public Land Systems, including subdivision of sections, restoration of lost or obliterated corners, original surveys and retracement surveys. The study of other land system topics such as State Plane Coordinate systems. Typically offered Fall.

### **CET 30400 - Legal Descriptions For Survey**

**Prerequisite(s):** CET 30300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Study of the writing and interpretation of legal descriptions as they pertain to the conveying of

land. Types of legal descriptions. Easement descriptions. Rights associated with written descriptions versus unwritten rights Other special topics in legal descriptions. Typically offered Fall Spring.

### **CET 30600 - Construction Surveying**

**Prerequisite(s):** CET 10400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Application of surveying skills relevant to the construction field. Projects include; layout of commercial and industrial buildings, transfer of horizontal and vertical control, establishment of route centerlines, establishment of lines and grades, determination of earthwork quantities, establishing slope stakes, triangulation, topographic mapping, etc. Instruments used will include transits, theodolites, automatic levels, construction lasers, and EDMs. Typically offered Fall Spring.

### **CET 30900 - Principles Of Highway Construction**

Credit Hours: 3.00. Basic principles of highway construction, including materials, methods, interpreting of plans and specifications, earthmoving, drainage, paving, bridges, and retaining walls. Typically offered Fall Spring.

### **CET 32200 - Astronomic And Geodetic Surveying**

**Prerequisite(s):** CET 21000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Determination of directions based on astronomic observations. Computations associated with geodetic surveying and geodetic control surveys. Associations of geodetic locations and plane coordinate locations. Introduction to surveying by use of GPS methods. Typically offered Spring.

### **CET 33100 - Properties And Behavior Of Soils**

**Prerequisite(s):** CET 26600 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Identification and properties of soils with emphasis on laboratory and field testing. Behavior of soils relating to design and construction of structures and highways. Typically offered Fall.

### **CET 38600 - Reinforced Concrete Construction**

Credit Hours: 3.00. A study of concrete as both a construction and structural material. Field methods and practices used in concrete construction. Fundamentals of reinforced concrete design as applied to beams, slabs, columns, walls and footings. Typically offered Fall Spring.

### **CET 40200 - Surveying Law**

**Prerequisite(s):** CET 30400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. The ownership and transfer of real property; land descriptions, statute law and common law; sequential and simultaneous conveyances; easements and reversions; riparian rights; the public land system; Rule 13. Typically offered Fall.

### **CET 40400 - Property Surveying**

**Prerequisite(s):** CET 40200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. The Land Surveyor in the context of real estate development and transfer. The rules and classification of evidence and their use. Transfers of real estate role of title companies. The process for a Legal Survey. Retracement survey on such survey. Plats and Reports. Case studies. Typically offered Fall Spring.

### **CET 40800 - Construction Of Highways**

Credit Hours: 3.00. Materials, design and methods used by flexible and rigid pavement construction. Topics include preliminary layout and design of intersections and highways, soil requirements, drainage requirements, construction procedures and maintenance. Typically offered Fall Spring.

### **CET 40900 - Property Surveying**

Credit Hours: 3.00. Office and field work associated with land surveying. Laws of land surveying and public records of real property. Metes and bounds, federal subdivision, and state plane coordinate descriptions. Typically offered Fall Spring.

### **CET 43200 - Foundation Construction**

Credit Hours: 3.00. A study of the design principles, construction methods equipment and construction procedures used in constructing shallow and deep foundations. Excavation procedures temporary bracing, construction site dewatering, and loads on underground structures will also be studied. Typically offered Fall Spring.

### **CET 49900 - Civil Engineering Technology**

Credit Hours: 1.00 to 4.00. This is an independent study course. Hours, subject matter and credit to be arranged by staff. Typically offered Fall Spring Summer.

## **Communication**

### **COM 10300 - The Freshman Seminar In Communication**

Credit Hours: 1.00 to 3.00. This course provides entry-level Communication majors with skills and materials deemed important to their ultimate success in Communications. Typically offered Summer Fall Spring.

### **COM 11400 - Fundamentals Of Speech Communication**

Credit Hours: 3.00. A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations. Typically offered Fall Spring Summer. CTL:ICM 1103 Fundamentals Of Public Speaking

### **COM 20100 - Introduction To Media Studies**

Credit Hours: 3.00. Introduction to Media Studies introduces students to the various fields in Mass Media including (but not limited to) Digital Media, Film, Journalism, the Internet, Radio, and Television. This course will survey the basic principles, theories, and processes of each specialized area. Typically offered Fall Spring Summer.

### **COM 20200 - Electronic Media**

Credit Hours: 3.00. Origin, development, nature, and function of radio and television in America. Typically offered Fall Spring Summer.

### **COM 20400 - Critical Perspectives On Communication**

Credit Hours: 3.00. Introduction to critical thinking and writing about communication. Draws on humanistic and qualitative traditions to help students learn and apply critical approaches to understanding communication.. Typically offered Summer Fall Spring.

### **COM 21000 - Debating Public Issues**

**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Study of argumentation as applied to public discourse. Lectures on logic and reasoning, library research methods and bibliography, identification and analysis of issues, construction and organization of cases, refutation and rebuttal, and the phrasing and delivery of the argumentative speech. Preparation of debate cases. Typically offered Fall Spring.

### **COM 21100 - Practicum In Speech Communication Activities**

Credit Hours: 2.00 to 4.00. Practice and training in the theory and techniques of applied communication activities. May include projects in organizational communication or public relations, public presentations, or participation in competitive forensic events. Typically offered Fall Spring Summer.

### **COM 21200 - Approaches To The Study Of Interpersonal Communication**

Credit Hours: 3.00. Introduction to the contemporary theories of interpersonal communication, with particular focus on the practical implications of the theories for the process of interpersonal and intrapersonal communication. Typically offered Fall Spring.

### **COM 21300 - Voice And Diction**

**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Introduction to the contemporary theories of interpersonal communication, with particular focus on the implications of the theories for the process of interpersonal and intrapersonal communication. Investigation and comparative analysis of rhetorical theories, linguistic theories, behavioral theories, quantitative theories and psychological theories will be emphasized, as will be construction and analysis of models of communication. Typically offered Fall Spring Summer.

### **COM 21400 - Comparative Theories Of Interpersonal Communication**

**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Introduction to the contemporary theories of interpersonal communication, with particular focus on the implications of the theories for the process of interpersonal and intrapersonal communication. Investigation and comparative analysis of rhetorical theories, linguistic theories and psychological theories will be emphasized, as will be construction and analysis of models of communications. Typically offered Fall Spring Summer.

### **COM 22500 - Introduction To Rhetoric And Social Influence**

**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A study of rhetoric as an agent of social change. Analysis of strategies and techniques of non-oratorical as well as oratorical forms of contemporary rhetorical situations. Typically offered Fall Spring Summer.

### **COM 22800 - Introduction To Communication Studies**

**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Introduction to Communication Studies will introduce students to the various fields in the Communication discipline including (but not limited to) Interpersonal Communication, Marketing Communication, Organizational Communication, Performance Studies, Public Relations, Rhetoric, and Small Group Communication. This course will survey the basic principles, theories, and processes of each specialized area. Typically offered Summer Fall Spring.

**COM 24000 - Introduction To Oral Interpretation****Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The study and application of basic theories of oral interpretation including the analysis and presentation of literature. Focus will be placed on the study of meaning and emotional content. Typically offered Spring.

**COM 25000 - Mass Communication And Society**

Credit Hours: 3.00. A survey of the print, broadcast, and film media in their relationship and influence on society. Study topics include: mass communication theories, documentaries, commercialism, news media, media effects and control, feedback, educational broadcasting, and audience analysis. Typically offered Fall Spring.

**COM 25100 - Communication, Information, And Society**

Credit Hours: 3.00. This course provides an introduction to information and communication technologies, including media and computer-related technologies. Basic information and technical literacy skills are developed, while discussing fundamental concepts of mediated communication in 21st century contexts. Typically offered Fall Spring Summer.

**COM 25200 - Writing For Mass Media****Prerequisite(s):** COM 25000 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Labor intensive course teaches basics of newspaper writing, broadcast writing, news releases, and online journalism. Typically offered Summer Fall Spring.

**COM 25300 - Introduction To Public Relations**

Credit Hours: 3.00. An analysis of public relations theories, methods, and practices. The course examines public relations environments, audiences, and message strategies in industrial, governmental, educational, social agencies, and other institutional contexts. Typically offered Fall.

**COM 25500 - Introduction To News Reporting And Writing****Prerequisite(s):** ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C OR ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF C OR ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Fundamentals of journalistic writing for the mass media. Emphasis is on style, news reporting, news values, and story construction. Extensive practice in reporting and writing various types of news stories. Typically offered Fall Spring Summer.

**COM 25600 - Introduction To Advertising**

Credit Hours: 3.00. An analysis of commercial persuasion from colonial times to the era of mass communication. The course examines the structure of advertising messages, how they are adapted to specific audiences, and the social settings in which they occur. Typically offered Fall Spring Summer.

**COM 26100 - Introduction To Digital Video Production**

Credit Hours: 3.00. Basic production principles and practices. Emphasis on preplanning and conceptualizing skills in addition to practical production techniques. Typically offered Fall.

**COM 29000 - Special Topics In Communication**

Credit Hours: 1.00 to 3.00. Topics will vary.. Typically offered Fall Spring.

**COM 30000 - Introduction To Communication Research Methods****Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C AND COM 22800 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Introduction to the development and application of historical, critical, and empirical research methods pertinent to communication problems. Fundamental concepts of problem identification, sampling, surveys, historical sources, critical models, reliability and validity of both measurement and research design in communication research. Typically offered Fall Spring Summer.

**COM 30100 - Applied Communication Research****Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C AND COM 30000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Students in applied Communication Research will be exposed to specific communication research methodologies in more depth and detail than possible in the introductory communication research course, COM 30000. Students in Applied Communication Research will undertake research projects which apply research concepts and methods obtained in COM 30000 and expand their knowledge of the art and practice of communication research. Typically offered Fall Spring Summer.

**COM 30101 - Political Economy Of Global Media**

**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C AND (COM 20100 FOR LEVEL UG WITH MIN. GRADE OF C OR COM 25000 FOR LEVEL UG WITH MIN. GRADE OF C) AND COM 32700 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Political economy of global media studies the structures and practices of media and the functions and uses of the global culture. Media structures, production and programming norms, and diverse regional and international soci-cultural trends and identified. Typically offered Fall Spring Summer.

### **COM 30102 - Media Globalization And Development**

**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C AND (COM 20100 FOR LEVEL UG WITH MIN. GRADE OF C OR COM 25000 FOR LEVEL UG WITH MIN. GRADE OF C) AND COM 32700 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Media globalization and development explores multiple theories in international developmental history and cultural practice from a media perspective. Media are studied as both the means to development and an industry of development, globally, and nationally. Typically offered Fall Spring Summer.

### **COM 30200 - Publications Design**

Credit Hours: 3.00. This course focuses on the design, layout and production of various documents using personal computers. Emphasis is given to principles of publication design and page makeup, typography, and the use of personal computers in business publishing. Typically offered Fall Spring Summer.

### **COM 30500 - News Editing**

**Prerequisite(s):** COM 25500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Study of, and practice in, the fundamentals of editing copy for and display of news in the mass media. Typically offered Fall Spring Summer.

### **COM 30600 - Advanced News Reporting And Writing**

**Prerequisite(s):** COM 25500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Advanced study of, and practice in, methods of journalistic research and presentation; preparation of in-depth news stories based on student research. Typically offered Fall Spring Summer.

### **COM 30700 - Written And Oral Communication For Engineers**

**Prerequisite(s):** (ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C) AND COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C AND (ECE 27500 FOR LEVEL UG WITH MIN. GRADE OF C OR ECE 37000 FOR LEVEL UG WITH MIN. GRADE OF C) AND (ME 30500 FOR LEVEL UG WITH MIN. GRADE OF C OR CE 27300 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 3.00. Course focuses on written and oral communication specifically for the environment, with special attention given to purpose, organization, audience analysis, and appropriate situational protocol. Written work emphasizes technical reports, technical descriptions, research skills, principles of document design, collaborative writing, and routine correspondence. Oral work emphasizes project presentations, conference planning and leadership, and small group dynamics. Typically offered Fall Spring Summer.

### **COM 30900 - Visual Communication**

Credit Hours: 3.00. Visual language is universal. This course will allow students to define visual language through investigating various visual mediums such as still images, film and television. Art elements of color, texture, space, composition, and design will be addressed. Various symbols and visual cues used to communicate messages will also be discussed. Typically offered Summer Fall Spring.

### **COM 31000 - Family Communication**

**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C AND COM 22800 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. The application of theories of interpersonal communication to family life. Emphasis on feedback, empathy, and trust as contributing factors to effective communication within families. A case study approach is used. Typically offered Fall Spring Summer.

### **COM 31200 - Rhetoric In The Western World**

Credit Hours: 3.00. An explanation of major theoretical and philosophical concepts concerning rhetoric as it relates to the development of Western civilization; the relationships between rhetoric and political, social, and personal decisions are explored. Ancient and modern authors will be read. Typically offered Fall Spring.

### **COM 31400 - Advanced Presentational Speaking**

**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Development of a marked degree of skill in the composition and delivery of various types of

speeches including presentations in corporate board rooms, orientation meetings, banquet halls, public forums. Special emphasis on speeches related to the student's major vocational area. Typically offered Fall Spring Summer.

### **COM 31500 - Speech Communication Of Technical Information**

**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. The organization and presentation of information of a practical technical nature. Emphasis is placed upon the study, preparation, and use of audiovisual materials in such presentations. Typically offered Fall Spring Summer.

### **COM 31800 - Principles Of Persuasion**

**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C AND COM 22800 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Persuasion and its effects on behavior, ranging from individual influences to societal impacts. Various perspectives and models of persuasion are examined, including classical and modern approaches. Both theoretical and pragmatic considerations are introduced and a focus as well on effective composition of persuasive discourse. Typically offered Fall.

### **COM 31900 - The Rhetorical Tradition**

Credit Hours: 3.00. A historical survey of major rhetorical theory as it relates to the development of Western civilization, with major emphasis on Aristotle and the New Rhetoric. Typically offered Fall Spring Summer.

### **COM 32000 - Small Group Communication**

**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A study of group thinking and problem-solving methods; participation in, and evaluation of, committee, and informal discussion groups. Focus on the roles, networks, and messages employed by small group communicators. Typically offered Fall Spring Summer.

### **COM 32200 - Leadership In Organization**

**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This program serves as the foundation for developing core leadership skills. Focusing on the dynamics of leadership development within a personal, academic, community, and organizational context, students will learn to apply basic leadership skills through a series of experiential learning sessions and lectures. These core skill areas include written, oral and inter personal communication; processing experiences into practical application; understanding leadership styles and roles; human behavior; on-going self-assessment; diversity as a value; basic technical competencies; and effective life/time management. Typically offered Fall Spring Summer.

### **COM 32300 - Business And Professional Speaking**

**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. The study of oral communication problems and responsibilities in the business-organizational environment. Participation in problem-solving from investigation and informative speaking to advocacy and parliamentary debate. Typically offered Fall Spring Summer.

### **COM 32400 - Introduction To Organizational Communication**

**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. An introduction to fundamental concepts and basic research related to communication behavior in organizational settings. Formal and informal channels will be analyzed on the basis of use, source content, potency and trustworthiness. Typically offered Fall.

### **COM 32500 - Interviewing: Principles And Practice**

**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Theory and practice of methods in selected interview settings: informational, employment, and persuasive. Emphasis on communication between two persons, questioning techniques, and the logical and psychological bases of interpersonal persuasion. Typically offered Fall Spring Summer.

### **COM 32600 - Speechwriting**

**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C AND COM 22800 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. By studying the rhetorical and performative elements for creating a successful speech, students will learn various speechwriting strategies that can be applied in political or organizational contexts. Typically offered Fall Spring Summer.

### **COM 32700 - International Communications**

**Prerequisite(s):** COM 20100 FOR LEVEL UG WITH MIN. GRADE OF C OR COM 25000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Introduction to the historical development of international communication for trade and diplomacy to the globalization of media markets and media models in news and entertainment. Modernization, developmental, dependency, hegemony, free flow of information, political economy, and other historical, administrative, and critical perspectives will also be discussed. Contemporary international media practices, including foreign direct investment, cultural hybridity, and contraflow. Typically offered Summer Fall Spring.

### **COM 33000 - Theories Of Mass Communication**

**Prerequisite(s):** COM 20100 FOR LEVEL UG WITH MIN. GRADE OF C OR COM 25000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An examination of mass communication theories and theorists. Readings and discussion of McLuhan, Lippman, De Fleur, Lazarsfeld, Schramm, Stephenson, and other significant contributors. Typically offered Fall Spring.

### **COM 33100 - Audio Production**

**Prerequisite(s):** COM 20100 FOR LEVEL UG WITH MIN. GRADE OF C OR COM 25000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Basic principles of producing, directing, and writing for radio. Treats program types, production methods, techniques of the sound studio, principles of directing radio programs, and laboratory practice in production and direction. Typically offered Fall Spring.

### **COM 33200 - Television Production**

**Prerequisite(s):** COM 33100 FOR LEVEL UG WITH MIN. GRADE OF C AND (COM 20100 FOR LEVEL UG WITH MIN. GRADE OF C OR COM 25000 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 3.00. Basic principles of producing, writing, and directing for television. Treats program types and television criticism, and explores creative treatment of visual, artistic, and nonverbal elements of communication in television. Permission of department required. Typically offered Spring Fall.

### **COM 33400 - Journalism For The Electronic Mass Media**

**Prerequisite(s):** COM 20100 FOR LEVEL UG WITH MIN. GRADE OF C OR COM 25000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. The development and practice of electronic journalism with projects relating to straight news, feature reports, commentary, editorial, interview, and documentary. Typically offered Fall Spring Summer.

### **COM 34201 - Introduction To Broadcast News**

Credit Hours: 3.00. This course assists students in writing for broadcast journalism, and broadcast delivery training, and offers a chance for exposure to area television and radio journalists. Typically offered Fall Spring Summer.

### **COM 34300 - Fundamentals Of Oral Interpretation**

**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A study of basic theories of oral interpretation including the analysis and presentation of literature. Typically offered Fall Spring Summer.

### **COM 34700 - Radio And Television Performance**

**Prerequisite(s):** COM 20100 FOR LEVEL UG WITH MIN. GRADE OF C OR COM 25000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course addresses the relationship between the producer, the director, and the talent in a production situation. Practice in performing for radio and television, as well as auditioning talent is the focus of this class. Typically offered Fall Spring Summer.

### **COM 34800 - Social Media And Public Relations**

**Prerequisite(s):** COM 25300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Course will introduce students to the management of social media for business. Students will incorporate practices learned in COM 25300, including the four-step process, systems theory and the ethics of a professional public relations practitioner, to manage the social media accounts of a local business and create new campaigns. Typically offered Fall Spring Summer.

### **COM 34900 - Media And Culture**

Credit Hours: 3.00. This course surveys film, music, art, popular magazines, television, and other media in terms of their symbolic relationship to diverse cultural practices including among others, religion, romance, dance, sport,



recreation, hobbies, and cuisine, and their connection to broader ethnic, gender, and class cultural expressions. To understand how media represent, express, and contribute to contemporary culture practices, students will consider mass market novels, professional sports, museums, music videos, talk radio, Hollywood and independent film, narrowcast cable television, websites, and other mass media genre. Typically offered Fall Spring Summer.

### **COM 35000 - Intercultural Communication**

**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C AND COM 22800 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course examines the communication processes used by individuals from various cultures. The class will explore the current theories in intercultural communication which demonstrate strategies for interacting with diverse cultures and ideas. Typically offered Fall Spring Summer.

### **COM 35100 - Mass Communication Ethics**

Credit Hours: 3.00. A survey of various ethical approaches applied to situations confronting contemporary mass communicators and will formulate a framework which can be used for resolving ethical questions in their professional work. Typically offered Spring.

### **COM 35200 - Mass Communication Law**

**Prerequisite(s):** COM 20100 FOR LEVEL UG WITH MIN. GRADE OF C OR COM 25000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Study of Anglo-American traditions and trends as well as current American conditions of the laws of libel, privacy, fair comment and criticism, privilege, property rights, and copyright as such factors affect the print journalist and the broadcaster. Emphasis is on existing state and federal regulations and precedents. Typically offered Fall Spring.

### **COM 35300 - Problems In Public Relations**

**Prerequisite(s):** COM 25300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Approaches to problems in public relations as they occur in industry, government, education, social agencies, and other institutions. Typically offered Fall Spring.

### **COM 35400 - Introduction To Health Communication**

Credit Hours: 3.00. Survey of theory and research in health communication, including interaction between patients and providers, communication in health care organizations, health care campaigns, and cultural meanings of health and illness. Exploration of the communication competencies needed by health care professionals (doctors, dentists, nurses, social workers, therapists, etc.) in the performance of their health care tasks. Typically offered Fall Spring.

### **COM 35800 - Specialized Reporting**

**Prerequisite(s):** COM 25200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Study of, and practice in, methods of journalistic research and presentation; preparation of in-depth newspaper stories based on student research. Typically offered Fall Spring.

### **COM 36500 - Communication And Aging**

**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Study of communication with and among the elderly, within the contexts of family, social networks, and social and health providers. Effects of communication on the aged and the perception of aging will be discussed. Typically offered Fall Spring Summer.

### **COM 37100 - Health Communication**

**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Exploration of the communication competencies needed by health care professionals (doctors, dentists, nurses, social workers, therapists, etc.) in the performance of their health care tasks. The course will emphasize helper-helpee interviewing, verbal and nonverbal skills, group interaction, intercultural communication, health care organizations, and therapeutic communication. Typically offered Fall Spring Summer.

### **COM 37600 - Communication And Gender**

Credit Hours: 3.00. An exploration of how men and women differ in the communication behavior by examination of an array of communication concepts and contexts. Focus is on communication processes that create symbols of gender and how those processes recreate the meanings of gender in the lives of individuals and groups. Typically offered Fall.

### **COM 39000 - Special Topics In Communication**

Credit Hours: 1.00 to 3.00. Topics will vary. Typically offered Fall Spring.

### **COM 40200 - Dark Side Of Interpersonal Communication**

Credit Hours: 3.00. The dark side of communication explores topics in the study of interpersonal relationships that are deemed dysfunctional or pathological. The course is meant to initiate a dialogue and create an understanding about the causes and consequences of the darker aspects of relationships. Typically offered Fall Spring Summer.

### **COM 40300 - Communication Ethics**

**Prerequisite(s):** COM 20100 FOR LEVEL UG WITH MIN. GRADE OF C OR COM 25000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Through research and discussion, students will develop an understanding of the ethical issues confronting the mass media and will formulate a framework which can be used for resolving ethical questions in their professional work. Typically offered Fall Spring Summer.

### **COM 40500 - The Rhetoric Of Women's Rights**

**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An analysis of the major arguments and persuasive techniques used in the American women's movement and continuing through the current struggle for equal rights. Included will be major speeches as well as non-oratorical forms of rhetorical messages. Typically offered Fall Spring Summer.

### **COM 41101 - Introduction To Writing In Health Sciences**

**Prerequisite(s):** ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. (ENGL 41101). This course provides an introduction to four areas of writing in the health sciences: patient education materials, pharmaceutical documentation, medical editing, and medical journalism. The course will involve lectures, guest speakers, team work, and a real world project. Typically offered Fall Spring Summer.

### **COM 41500 - Discussion Of Technical Problems**

Credit Hours: 3.00. Principles of speech communication related to interpersonal and group discussions on technical topics and problems; practice in using these modes in situations typically encountered by technologists. Typically offered Fall Spring.

### **COM 41800 - Communication And Gender**

**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An exploration of how men and women differ in the communication behavior by examination of an array of communication concepts and contexts. An exploration of gender differences as developed through our perceptual processes, our socialization processes, and our communication processes. To provide the student a better understanding and awareness of the gender differences in order to improve combination behaviors and to enable better understanding of why effective communication between men and women is often difficult to accomplish. Typically offered Fall Spring Summer.

### **COM 42000 - Introduction To Organizational Communication**

**Prerequisite(s):** COM 22800 FOR LEVEL UG WITH MIN. GRADE OF C AND COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Examination of the communication concepts and practices related to the function and success of organizations. Formal and informal channels will be analyzed on the basis of use, source content, potency and trustworthiness. Readings and analyses will focus on goals, reliability and applicability appropriate of organizational settings. Types of organizational settings. Types of organizations to be studied will include industrial giants, governmental agencies, social and educational administrative bodies, and formal task groups. Typically offered Fall Spring Summer.

### **COM 42500 - Rhetorical Criticism**

**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C AND (COM 20100 FOR LEVEL UG WITH MIN. GRADE OF C OR COM 25000 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 3.00. A comparative study of the writings on traditional and contemporary rhetorical criticism. Students will have an opportunity to describe, analyze, interpret, and evaluate persuasive discourse. Typically offered Fall Spring Summer.

### **COM 42600 - Identity And Communication**

**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C AND COM 22800 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Identity and Communication explores communication processes and strategies related to race, ethnicity, gender, class, sexuality, international, and liminal identity. The course will focus on identity intersections and how these intersections affect our understanding of communication. Typically offered Fall Spring Summer.

**COM 42900 - Advertising Campaigns****Prerequisite(s):** COM 25600 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Emphasizes the preparation of a complete advertising campaign for a business or non-profit organization. The student will be able to integrate marketing research and segmentation, media, and promotion plans, strategy, creative, and presentation in a unified campaign to serve a local or national organization. Typically offered Summer Fall Spring.

**COM 43400 - Practicum In Radio and Television****Prerequisite(s):** COM 20100 FOR LEVEL UG WITH MIN. GRADE OF C OR COM 25000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Students engage in Independent Study projects and actual production of a television program under the direction of a professor or Purdue Calumet Television manager. Typically offered Fall Spring Summer.

**COM 43500 - Communication And Emerging Technologies****Prerequisite(s):** COM 30000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Both historical and contemporary perspectives of the reciprocal influence of new and changing technologies and the processes and practices of communication. The impact of print, telegraph, telephone, radio, and television will be surveyed, along with cable systems, direct broadcast satellites, and videotext. Typically offered Fall Spring Summer.

**COM 43600 - Script Writing****Prerequisite(s):** ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF C OR ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Study of forms and materials suitable for the electronic mass media; practice in selection, adaptation, and organization of program materials. Typically offered Fall Spring.

**COM 43700 - Performance Practicum**

Credit Hours: 3.00. Performance Practicum extends performance knowledge and skills acquired in COM 34300, Fundamentals of Oral Interpretation. Students will participate as scriptors, directors, and performers in a campus and community performances. Typically offered Fall Spring Summer.

**COM 43900 - Focus Group Research****Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. In Focus Group Research, students will learn when to use and how to conduct this specific method of qualitative inquiry. Through theory and practice, this course will provide the information necessary for students to conduct focus groups in organizational academic contexts. Typically offered Fall Spring Summer.

**COM 44100 - Advanced Television Production****Prerequisite(s):** (COM 20100 FOR LEVEL UG WITH MIN. GRADE OF C OR COM 25000 FOR LEVEL UG WITH MIN. GRADE OF C) AND COM 33100 FOR LEVEL UG WITH MIN. GRADE OF C AND COM 33200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An emphasis on remote television production techniques, which includes operating basic remote television equipment. Students will produce and direct various remote television programs, which should be suitable for airing. Typically offered Fall Spring Summer.

**COM 44200 - Problems In Television Directing And Producing****Prerequisite(s):** COM 33200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A studio in which students address problems encountered in both dramatic and nondramatic formats as they write, produce, and direct programs during the semester. Emphasis on organizational skills, program analysis, and aesthetic judgment. Typically offered Fall Spring.

**COM 44300 - Advertising Media****Prerequisite(s):** COM 25600 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course is an introduction to advertising media planning in traditional and new media to creatively and effectively reach targeted prospects. Attention is given to media characteristics, media terminology, scheduling, testing, and buying efficiencies. Included is the use of syndicated media research and development of media plans. Typically offered Summer Fall Spring.

**COM 44500 - Television Editing****Prerequisite(s):** (COM 20100 FOR LEVEL UG WITH MIN. GRADE OF C OR COM 25000 FOR LEVEL UG WITH MIN. GRADE OF C) AND COM 33100 FOR LEVEL UG WITH MIN. GRADE OF C AND COM 33200 FOR

LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A study of the practical application of editing techniques. Students will edit various television programs, which should be suitable for airing. Typically offered Fall Spring Summer.

### **COM 44600 - Advertising Management**

**Prerequisite(s):** COM 25600 FOR LEVEL UG WITH MIN. GRADE OF C AND BA 22400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course considers advertising from the perspective of managers and practitioners responsible for identifying and solving the advertising problems of a business. The course emphasizes the application of concepts, such as the planning of advertising strategy, the execution of target marketing, budgeting, creative development and media decisions, with the goal of developing integrated marketing communications campaigns. Typically offered Summer Fall Spring.

### **COM 44800 - Applied Mass Media Research**

**Prerequisite(s):** (COM 20100 FOR LEVEL UG WITH MIN. GRADE OF C OR COM 25000 FOR LEVEL UG WITH MIN. GRADE OF C) AND COM 22800 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Through an examination of current research in mass media, Applied Mass Media Research will provide students with the necessary tools to conduct and critique research that pertains specifically to the mass media. Students will learn how to research a mass media related issue. Typically offered Summer Fall Spring.

### **COM 45100 - Feature Writing**

**Prerequisite(s):** COM 25500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Examination of magazine staff organization, market analysis, and editorial content. Study of, and practice in, the writing of a variety of nonfiction materials for magazines. Emphasis is on the adaptation of topics and presentations to editorial policies and reader groups. Typically offered Fall Spring.

### **COM 45200 - Practicum In Journalism**

**Prerequisite(s):** COM 25500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Assigned projects in journalism. Permission of instructor required. Typically offered Fall Spring Summer.

### **COM 46000 - Advanced Public Relations**

**Prerequisite(s):** COM 25300 FOR LEVEL UG WITH MIN. GRADE OF C AND COM 25500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Research design and implementation skills applied by students individually and in groups to actual business communication problems. Typically offered Fall Spring Summer.

### **COM 46300 - Mass Media Criticism**

**Prerequisite(s):** COM 20100 FOR LEVEL UG WITH MIN. GRADE OF C OR COM 25000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Utilizing the current media criticism theories and models, students will learn how to critique a variety of media genres. Students will examine the social and political messages inherent in media messages. Typically offered Summer Fall Spring.

### **COM 46500 - Visual Aesthetics In Television And Film**

Credit Hours: 3.00. This course examines the visual aesthetics of television and film. Topics covered are picture composition, lighting, acting, directing, continuity, cinematography, editing, story line, and costume. Typically offered Summer Fall Spring.

### **COM 47000 - Women In The Media**

**Prerequisite(s):** (COM 20100 FOR LEVEL UG WITH MIN. GRADE OF C OR COM 25000 FOR LEVEL UG WITH MIN. GRADE OF C) AND (WOST 12100 FOR LEVEL UG WITH MIN. GRADE OF C OR ETHN 10000 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 3.00. Focusing on the contributions made by women in newspaper, television, film and performance, this course will explore how women are shaping societal and cultural values. Typically offered Fall Spring Summer.

### **COM 47500 - Identity In Film**

**Prerequisite(s):** (COM 20100 FOR LEVEL UG WITH MIN. GRADE OF C OR COM 25000 FOR LEVEL UG WITH MIN. GRADE OF C) AND (WOST 12100 FOR LEVEL UG WITH MIN. GRADE OF C OR ETHN 10000 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 3.00. Identity in Film explores the construction of race, ethnicity, gender, class, sexuality, international, and liminal identity in films created by an individual of that particular identity. The course examines identity and communication processes through the sensibility of the film's director or writer. Typically offered Fall Spring Summer.

### **COM 49000 - Internship In Communication**

**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C AND COM 22800 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 1.00 to 3.00. Experiential, supervised training in public relations, journalism, telecommunication, oral interpretation, speech education, organizational communication, or public communication. Typically offered Fall Spring Summer.

### **COM 49100 - Special Topics In Communication**

Credit Hours: 1.00 to 3.00. Intensive study of selected topics, varying from semester to semester, from the literature or practice of communication. Course content will be drawn from areas not dealt with in the regular curriculum and may include such topics as photojournalism, economic reporting, and campaign communication. Permission of instructor required. Typically offered Summer Fall Spring.

### **COM 50800 - Nonverbal Communication In Human Interaction**

Credit Hours: 3.00. An examination of theoretical writings and critical studies in selected areas of nonverbal communication, e.g., the environmental influences, space and territory relationships, physical appearance and dress, physical behavior, and vocal cues. One unit will deal specifically with measurement, recording, or transcription methods used in nonverbal study. Typically offered Fall.

### **COM 51200 - Theories Of Interpersonal Communication**

**Prerequisite(s):** COM 21400 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. Review of contemporary theories, analysis of concepts, models, and pertinent research across the broad spectrum of interpersonal communication. Typically offered Summer Fall.

### **COM 51500 - Persuasion In Social Movements**

**Prerequisite(s):** COM 31800 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. A study of the concept of persuasion in social movement theory and the role rhetoric has played historically in selected social movements such as suffrage, women's liberation, civil rights, evangelism, and trade unionism. Typically offered Summer Spring.

### **COM 51700 - Communication In Politics**

**Prerequisite(s):** COM 31800 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. Development and application of critical standards to the rhetoric employed by candidates for public office, study of the campaign strategies employed by parties and their candidates at various levels of government. Typically offered Summer Fall.

### **COM 51800 - Theories Of Persuasion**

Credit Hours: 3.00. Review of contemporary theories, including analysis of concepts, models, and pertinent research across the broad spectrum of persuasive communication. Typically offered Fall Spring Summer.

### **COM 52000 - Small Group Communication**

**Prerequisite(s):** COM 32000 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. Survey and critical evaluation of theoretical and empirical literature dealing with human communication within small group settings. Typically offered Summer Fall.

### **COM 52100 - Theories Of Rhetoric**

Credit Hours: 3.00. A comprehensive survey of the principal figures, theories, and movements in rhetoric from the classical era to the present. Typically offered Spring Fall.

### **COM 52500 - Advanced Interviewing And Conference Methods**

Credit Hours: 3.00. Application of modern communication theory to interview situations, with emphasis upon problems involving superior-subordinate relations, information-getting and interpersonal misunderstanding. Classroom demonstrations based upon real-life cases, supplemented by off-campus interviews; practice in briefing techniques. Typically offered Spring.

### **COM 53100 - Special Topics In Mass Communication**

**Prerequisite(s):** COM 25000 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. Critical analysis and evaluation of current and continuing problems in both commercial and public mass communication. Typically offered Fall Spring Summer.

### **COM 53400 - Comparative Telecommunication Systems**

Credit Hours: 3.00. Historical, sociological, and political aspects of various systems of telecommunication throughout the world. Examination of American, Canadian, British, French, German, Soviet, and other telecommunication institutions. Typically offered Fall Spring Summer.

### **COM 53700 - Educational/Instructional Television**

Credit Hours: 3.00. Survey of the educational and instructional applications of television materials; analysis of selected problems in the educational uses of the medium; analysis and application of production practices as related to the learning process. Typically offered Fall Spring Summer.

### **COM 54000 - Advanced Oral Interpretation**

Credit Hours: 3.00. Techniques of oral interpretation for public performances. Emphasis on analysis of materials, program building, and criticism. Utilization of oral reading techniques in the teaching of literature and speech at the secondary level. Typically offered Spring.

### **COM 54500 - Theories Of Oral Interpretation**

Credit Hours: 3.00. A study of the theories of oral interpretation of literature that have emerged from the classical period of Greece and Rome to the present. Emphasis on the influence of leaders in the field during the eighteenth, nineteenth, and twentieth centuries. Typically offered Fall Spring Summer.

### **COM 55900 - Current Trends In Mass Communication Research**

Credit Hours: 3.00. An examination of current research as it contributes to understanding the process and effects of mass communication. Topics covered include gatekeepers and information control, audience selection processes and uses of the media, persuasive effects of the media, media content and social learning, the effects of adult programming on children, and the effects of the media on the governmental process. Typically offered Fall Spring.

### **COM 56000 - Rhetorical Dimension Of Mass Media**

Credit Hours: 3.00. A study of the ways in which rhetorical elements and processes are embodied in and modified by the media of mass communication. The rhetorical functions of print and electronic media are examined individually as well as within the context of specific campaigns and movements. Typically offered Fall Spring.

### **COM 57400 - Organizational Communication**

Credit Hours: 3.00. Survey of the theoretical and empirical literature dealing with human communication behavior as it occurs within the context of complex organizations. Among topics covered are superior-subordinate communication, communication networks, message distortion, feedback processes, internal corporate mass media, managerial-communication climate, semantic and stylistic dimensions of messages, and communication in decision making. Typically offered Summer Fall.

### **COM 58200 - Descriptive/Experimental Research In Communication**

Credit Hours: 3.00. Introduction to the fundamental tools of quantitative research in communication, including data analysis, statistical design and methods, basic measurement concepts, and designs for descriptive and experimental research. Individual and/or group research projects are planned, conducted, and reported. Permission of instructor required. Typically offered Fall Spring Summer.

### **COM 58300 - Research And Assessment In Organizational Communication**

**Prerequisite(s):** COM 57400 FOR LEVEL GR WITH MIN. GRADE OF B- AND COM 58200 FOR LEVEL GR WITH MIN. GRADE OF B-

Credit Hours: 3.00. An overview of applied research methodologies in organizational communication. The course focuses on the design of field investigations and the use of self-report measures, network analysis, and interviewing in organizational communication research. These general methodologies are applied to specific research approaches. Typically offered Spring.

### **COM 58400 - Historical/Critical Research In Communication**

Credit Hours: 3.00. Introduction to modes of qualitative research in communication, including theoretical assumptions, bibliographical methods, varying approaches to historical and critical inquiry, and the standards and techniques of scholarly writing. Emphasis is placed on historical research during fall semesters and on critical research during spring semesters. Permission of instructor required. Typically offered Fall Spring Summer.

### **COM 59000 - Directed Study Of Special Problems**

Credit Hours: 1.00 to 3.00. Directed study of special problems. Permission of instructor required. Typically offered Fall Spring Summer.

### **COM 61200 - Seminar: Special Topics In Interpersonal Communication**

Credit Hours: 3.00. Intensive study of selected topics, varying from semester to semester, from the theoretical and research literature of interpersonal communication. Topics may include communication models, information theory, systems theory, general semantics, sociolinguistics, etc., as they relate to the study of interpersonal communication. Prerequisite: COM 51200. Typically offered Summer Spring.

### **COM 62100 - Seminar: Special Topics In Rhetorical Theory**

Credit Hours: 3.00. Intensive study of selected topics, varying from semester to semester, from the literature of rhetorical theory. Prerequisite: COM 52100. Typically offered Fall Spring Summer.

**COM 63200 - Seminar: Special Topics In Mass Communication**

Credit Hours: 3.00. Intensive study of selected topics, varying from semester to semester, from the literature of mass communication. Topics may include institutional analysis, mass communication law, information diffusion, uses of mass communication, or other issues. Permission of instructor required. Typically offered Fall Spring.

**COM 67400 - Seminar: Special Topics In Organizational Communication**

Credit Hours: 3.00. Intensive study of selected topics, varying from semester to semester, from the theoretical and research literature of organizational (including business and industrial) communication; analysis of recurring communication problems in complex organizations; critique of research findings and methodologies. Typically offered Fall Spring.

**COM 69800 - Research MA Or MS Thesis**

Credit Hours: 1.00 to 18.00. Research MA Or MS Thesis. Permission of instructor required. Typically offered Fall Spring Summer.

**Community College****GNC 06400 - Introductory Algebra**

Credit Hours: 3.00. Does not count toward graduation. Introduction to algebra concepts and skills, including real-number and variable operations, linear equations, graphing, and systems of linear equations. Emphasis on applications as well as structure. Mastery learning approach. Pocket calculators used.. Typically offered Fall Spring.

**GNC 06500 - Fundamentals of Geometry**

Credit Hours: 3.00. Does not count toward graduation. Introduction to fundamental concepts of geometry, including angles, polygons, and circles, with emphasis on problem solving. Pocket calculators used. This course satisfies the one unit of geometry required for admission, but does not count toward graduation.. Typically offered Fall Spring Summer.

**Computer Graphics Technology****CGT 10100 - Introduction to Computer Graphics Technology**

Credit Hours: 3.00. This course provides an introduction to and a survey of the discipline of computer graphics. The topics include a survey of the applications of computer graphics, the knowledge base and history of computer graphics, an examination of computer graphics technologies and careers as well as an overview of available resources for study and research in computer graphics. Typically offered Fall Spring.

**CGT 11000 - Technical Graphics Communications**

Credit Hours: 3.00. This course is an introduction to the graphic language used to communicate design ideas using CAD. Topics include sketching, multiview drawings, auxiliary views, pictorial views, working drawings, dimensioning practices, and section views. Typically offered Fall Spring Summer.

**CGT 11100 - Designing For Visualization And Communication**

Credit Hours: 3.00. An introductory design course for computer graphics majors. Students develop an understanding of the basic design elements and principles, composition, and typography through exercises and projects. The focus is on visual thinking, exploring the relationship between type and image, and developing multiple solutions to a given problem. Typically offered Fall Spring Summer.

**CGT 11200 - Sketching For Visualization And Communication**

Credit Hours: 3.00. This course applies fundamental computer graphics concepts of visualization, communication, and creativity within a sketching metaphor. Exercises and projects in graphic theory, problem solving, and sketching skill development provide students with activities that focus on further development within the discipline. A variety of sketching techniques are used to gather critical information and transform data into effective communication instruments. Typically offered Fall Spring Summer.

**CGT 11600 - Geometric Modeling For Visualization And Communication**

Credit Hours: 3.00. A core introductory computer graphics course that provides entry-level experiences in geometric modeling. Students develop geometric analysis and modeling construction techniques and processes to produce accurate computer models for graphic visualization and communication. Typically offered Fall Spring Summer.

**CGT 11700 - Illustrating For Visualization And Communication**

Credit Hours: 3.00. This foundation course stresses the use of pictorial illustration for visualization and communication. Various projection systems are introduced with discussion focusing on the appropriate use of view and system utilized to accentuate and provide clear communication. A variety of digital tools are used to construct, extract and render pictorial views using vector and raster tools. Typically offered Fall Spring Summer.

**CGT 14100 - Internet Foundations Technologies And Development**

Credit Hours: 3.00. (CNIT 14100) The course explores the history, architecture, and development of the World Wide Web. Current tagging and scripting languages are covered in a tool-independent environment. Topics also include authoring tools, design, graphic and multimedia formats, and commerce, implementation, and security issues. PC literacy required. Typically offered Fall Spring.

**CGT 16300 - Graphical Communication And Spatial Analysis**

Credit Hours: 2.00. An introductory course in computer graphics applications for mechanical- and aeronautical-related professions. Experiences focus on visualization, sketching, graphic standards, and problem-solving strategies for engineering design. The course will emphasize the proper use of parametric solid modeling for design intent. Typically offered Fall Spring.

### **CGT 16400 - Graphics For Civil Engineering And Construction**

Credit Hours: 2.00. An introductory course in the area of computer graphics documentation for civil engineering- and construction-related professions. Experiences focus on accepted industry graphic standards and their technical visual applications. The course emphasizes creation and distribution of graphics to enable communication. Typically offered Fall Spring.

### **CGT 21100 - Raster Imaging For Computer Graphics**

Credit Hours: 3.00. Digital images are produced using a variety of computer technologies. Advanced color theory, surface rendering, and light control are emphasized in relation to technical illustration, hardware characteristics, and software capabilities. Typically offered Fall Spring Summer.

### **CGT 21500 - Computer Graphics Programming I**

Credit Hours: 3.00. This course focuses on programming fundamentals, logic, and problem solving necessary for advancement into upper level CGT courses. A cross-section of languages and technologies will be introduced and demonstrated. Typically offered Fall Spring.

### **CGT 21600 - Vector Imaging For Computer Graphics**

Credit Hours: 3.00. Full-color vector illustrations for a variety of uses are produced using computer methods. Color theory, surface analysis, and rendering techniques are emphasized as they apply to vector-based illustrations. Typically offered Fall Spring Summer.

### **CGT 22600 - Introduction To Constraint-Based Modeling**

**Prerequisite(s):** CGT 21100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course explores the techniques used in the construction and manipulation of constraint-based solid models and assemblies. Emphasizes extracting data from databases. Downstream applications of data and the impact on overall product design processes are explored. Typically offered Fall Spring Summer.

### **CGT 24100 - Introduction to Computer Animation**

Credit Hours: 3.00. This course introduces the knowledge base on which digital animation and spatial graphics technology are founded and developed. Emphasis will be placed on developing a working knowledge of the mechanics of 3D geometric formats, spline-based modeling with polygon mesh & NURBS, procedural mapping of raster images, simplified polygon modeling, rendering methods, hierarchical linking, and kinematic fundamentals. Typically offered Fall Spring Summer.

### **CGT 25100 - Principles Of Creative Design**

**Prerequisite(s):** CGT 11100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course is an exploration of conceptualization and problem solving using the integration of type and image as both visual and verbal communication. Topics such as systems of organization, visual hierarchy, creativity, typography, color, and navigation are introduced and explored. Typically offered Fall Spring Summer.

### **CGT 25600 - Principles Of User Experience Design**

**Prerequisite(s):** CGT 11100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course introduces students to the process of user-centered design of computer systems humans interact with. Students learn how to draw upon principles of usability and user interface design rooted in human psychology and user research in order to conceptualize, prototype, and evaluate computer systems. Topics include processes such as user research, conceptual design, prototyping, and evaluation and concepts such as visual hierarchy, usability, information architecture, navigation, and more. The course is platform-independent and encourages students to experiment with new and emerging technologies. Typically offered Fall Spring Summer.

### **CGT 26200 - Introduction To Construction Graphics**

**Prerequisite(s):** CGT 11000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Study of graphic solutions to problems conditioned by traditional and emerging construction document standards. Construction document creation is based on current architectural engineering and construction (AEC) standards with a focus on residential settings. Introductory 2D documentation will progress into 3D modeling techniques. Typically offered Fall Spring Summer.

### **CGT 29000 - Computer Graphics**

Credit Hours: 1.00 to 3.00. Course topics will be determined by the CGT faculty. Hours and subject matter shall be arranged by the instructor and approved by the CGT curriculum committee. This course will not be used for independent study. Typically offered Fall Spring.

### **CGT 30100 - Creating Graphics for Digital Display**



**Prerequisite(s):** CGT 21100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The process of creating, editing and reformatting graphics for web and multimedia presentation. Students will gain proficiency in the creation and manipulation of raster and vector based imagery in appropriate technology formats for multimedia delivery. Color theory, design, communication and presentation skills will be emphasized. Typically offered Summer Fall Spring.

### **CGT 30400 - Color and Composition**

**Prerequisite(s):** CGT 21600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Students examine traditional color harmonies and modernist theories. Interaction of color and the application of these ideas in the work of 20th century artists are studied and adapted to student projects. Creative and expressive uses of color in all areas of design are encouraged. Typically offered Summer Fall Spring.

### **CGT 30500 - Interactive Animation and Delivery Methods**

**Prerequisite(s):** CGT 21600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. New and emerging computer technologies are used to create interactive media-rich Web and stand-alone delivery projects. Students focus on the use of emerging scripting technologies that extend the capabilities of HTML, including JavaScript and ActionScript. Additionally, unique vector and raster implementations, such as Macromedia Flash, will be discussed and used. The course furthers the student's ability to utilize the time and location independent capabilities of Web and new interactive multimedia content delivery methods. Typically offered Summer Fall Spring.

### **CGT 30700 - Advanced Graphic Design for Web and Multimedia**

**Prerequisite(s):** CGT 14100 FOR LEVEL UG WITH MIN. GRADE OF C AND CGT 21100 FOR LEVEL UG WITH MIN. GRADE OF C AND CGT 21600 FOR LEVEL UG WITH MIN. GRADE OF C AND CGT 25600 FOR LEVEL UG WITH MIN. GRADE OF C AND CGT 35300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course focuses on employing advanced techniques and web technology to create interactive components and applications. Areas of concentration include creation, integration and manipulation of graphical objects using programming libraries and frameworks. Significant time is spent on applying advanced scripting techniques and developing interactive interfaces for web-based and mobile applications. Typically offered Fall Spring Summer.

### **CGT 30800 - Prepress Production And Design**

**Prerequisite(s):** CGT 21600 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course focuses on the process of designing, creating, and preparing documents for commercial printing. Students will develop proficiency with publishing software. Topics include page layout, font and image management, color, printing processes, papers, bindings and proofing methods. Projects emphasize designing single and multi-page documents for business and advertising such as identities, flyers, brochures, forms, catalogs, newsletters and booklets. Typically offered Summer Fall Spring.

### **CGT 30900 - Internship In Computer Graphics Technology**

Credit Hours: 2.00 or 3.00. Internship course in computer graphics technology. Practical experience totaling at least 240 hours in computer graphics technology. Permission of department required. Typically offered Summer Fall Spring.

### **CGT 31000 - Drawing, Acting And Scripts For Animation**

**Prerequisite(s):** CGT 11200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course analyzes the symbiotic relationship between thinking and physical action, between emotion and its expression. Students will explore the visual storytelling process for film, animation, video games or multimedia. Students will learn the history of and gain needed drawing skills to create storyboards, animatics, along with the learning the importance to the production process. Students will learn how animation scripts are developed as well as how visual stories are told through technical elements such as composition, lighting, framing and perspective. Students will explore how to tap into their creativity and create interesting original animations. Typically offered Summer Fall Spring.

### **CGT 31600 - Industrial Applications of Computer Graphics Technology**

Credit Hours: 1.00 to 3.00. This course includes specialized topics, skills, and applied problem solving associated with Computer Graphics Technology. The level of coverage varies according to the audience. Several variable topics may be offered under this title. Permission of instructor required. Typically offered Fall Spring.

### **CGT 33000 - Multimedia, Animation And Video Game Design And Development**

**Prerequisite(s):** CGT 24100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course outlines all the details to create an original video game, build an effective game

proposal outline with background information, the story, asset lists, hardware and software requirements. This course will teach the student to maximize design and development time of the original creator. Students will properly detail the proposal for a programming and artistic team to take a game from start to finish. Typically offered Summer Fall Spring.

### **CGT 34000 - Digital Lighting And Rendering for Computer Animation**

**Prerequisite(s):** CGT 24100 FOR LEVEL UG WITH MIN. GRADE OF C AND CGT 11600 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. The development of a working knowledge of perspective display of three-dimensional models and the resulting effects of projected light sources on shade, shadow, color, texture, and atmospheric effects in architecture, product illustration, and animation. Emphasis will be placed on lighting design, analysis, and photorealistic simulation for commercial graphic applications. Typically offered Fall Spring Summer.

### **CGT 34100 - Motion for Computer Animation**

**Prerequisite(s):** CGT 24100 FOR LEVEL UG WITH MIN. GRADE OF C AND CGT 11600 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An applied course covering three-dimensional computer graphic animation for graphics specialists and professionals involved in the use of technical design, time and motion study, surface texture mapping, digital lighting, color, and the technology required to produce computer animations for commercial applications in manufacturing design, marketing, and training. Typically offered Fall Spring Summer.

### **CGT 34600 - Digital Video And Audio**

**Prerequisite(s):** CGT 24100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Covers the use of digital technologies for video and audio in multimedia, hypermedia, and animation products. Students examine the methods for creating, sampling, and storing digital video and digital audio and the constraints placed on these media assets when used for media-based products. Emphasis is placed upon the technology of digital video and audio, including formats, data rates, compressors, and the advantages and disadvantages of the different technologies. Typically offered Fall Spring Summer.

### **CGT 35100 - Interactive Multimedia Design**

**Prerequisite(s):** CGT 25600 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course introduces the many facets of interactive multimedia design and production. Students are introduced to authoring programs used for information delivery, with special attention focused on the integration of various media assets for communication. There is also concentration on the storage, management, and retrieval of media assets in a production environment. Considerable time is spent on the systematic design of interactive media products to meet specified goals of communication. Typically offered Fall Spring Summer.

### **CGT 35300 - Principles Of Interactive And Dynamic Media**

**Prerequisite(s):** CGT 21600 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course explores the development of interactive and dynamic media components for web and interactive media products. The course examines the design, creation and integration of 2D animation, 2D games, text, sound, video, programming, and databases for use in web and other interactive media. Typically offered Fall Spring Summer.

### **CGT 35600 - Web Programming, Development And Data Integration**

**Prerequisite(s):** CGT 25600 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A course focusing on the development of dynamic content and applications to facilitate information distribution. The course stresses development strategies for managing the rapidly changing information of corporations and organizations for just-in-time distribution, using authoring programs to create interactive multimedia products that utilize database management systems, file systems, and XML to provide a method for visualizing and manipulating that data. Significant time is spent on intermediate to advanced programming and scripting. Typically offered Fall Spring Summer.

### **CGT 41100 - Contemporary Problems In Applied Computer Graphics**

**Prerequisite(s):** CGT 25600 FOR LEVEL UG WITH MIN. GRADE OF C AND CGT 35600 FOR LEVEL UG WITH MIN. GRADE OF C AND CGT 35100 FOR LEVEL UG WITH MIN. GRADE OF C AND CGT 35300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Groups will identify, design, qualify, manage, create, and present a final project relative to existing or emerging issues within applied computer graphics. Activities and experiences will explore related topics such as project planning and management, user expectations, interpersonal communications skills, and quality management.

The course concludes with faculty, peers, and practicing professionals evaluating oral, written, and media presentations of final projects. Typically offered Fall Spring.

### **CGT 41501 - Contemporary Problems In Applied Computer Graphics**

Credit Hours: 2.00. Students identify, research, define, and propose a senior project relative to existing or emerging issues within Computer Graphics Technology. Activities and experiences will explore related topics such as self-assessment, industrial needs and applications, exploratory research, interpersonal communication skills, and management of time, resources, and quality assurance. The course concludes with faculty, peers, and practicing professionals evaluating formal project proposals developed by individual students. Permission of instructor required. Typically offered Fall Spring.

### **CGT 41600 - Senior Design Project**

**Prerequisite(s):** CGT 41100 FOR LEVEL UG WITH MIN. GRADE OF C OR CGT 41500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This capstone course requires students to engage in a substantive endeavor directed at solving problems related to computer graphics. Activities include the creation and management of graphic systems and media assets per the requirements of the senior design proposal. Students are required to demonstrate professional attitudes and attributes in the timely completion and presentation of their project. Typically offered Fall Spring Summer.

### **CGT 44200 - Production for Computer Animation**

**Prerequisite(s):** CGT 34100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An applied course covering advanced spline modeling techniques, lighting techniques, applied shading, motion dynamics and controllers, particle systems, application customization programming, and pre-production development and planning. Study of emerging advancements in computer animation and spatial graphic technologies will be included. Typically offered Fall.

### **CGT 44600 - Post-Production And Special Effects For Computer Animation**

**Prerequisite(s):** CGT 44200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A variety of commercial applications of technical animation and spatial graphics are analyzed and produced, with special emphasis upon client development, design, organization, scripting, storyboarding, technical production, management, and evaluation. Typically offered Spring.

### **CGT 45000 - Professional Practices**

**Prerequisite(s):** CGT 41100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Preparation for professional employment in computer graphics professions. Topics covered include creative and publishing law, contracts, copyrights, corporate and freelance employment considerations; portfolio planning; and interviewing. Arranged interviews and portfolio reviews. Typically offered Summer Fall Spring.

### **CGT 45100 - Multimedia Application Development**

**Prerequisite(s):** CGT 35100 FOR LEVEL UG WITH MIN. GRADE OF C AND CGT 35300 FOR LEVEL UG WITH MIN. GRADE OF C AND CGT 35600 FOR LEVEL UG WITH MIN. GRADE OF C OR CGT 25600 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. This course focuses on the development of applications that manipulate media assets. Significant time is spent on intermediate to advanced programming and scripting as well as the synchronization of aural and graphical components. Students are required to plan, design, and implement a major project, and a final presentation is required. Typically offered Fall Spring.

### **CGT 45600 - Advanced Web Programming, Development And Data Integration**

**Prerequisite(s):** CGT 35600 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. This course presents the advanced technologies available for use on the World Wide Web and within corporate intranet environments. Emphasis and discussion is focused on the advantages and disadvantages of these technologies as well as on implementation to create unique solutions for business and industry. Strategies for planning, development, and implementation will be discussed and demonstrated. Significant time is spent on advanced programming and scripting as well as manipulation and visualization of data from various sources, including robust database management systems. Students are required to plan, design and implement a major project. Typically offered Fall Spring.

### **CGT 49000 - Computer Graphics**

Credit Hours: 1.00 to 3.00. Senior-level course topics will be determined by the CGT faculty. Hours and subject matter shall be arranged by the instructor and approved by the CGT curriculum committee. This course will not be used for independent study. Typically offered Fall Spring.

### **CGT 49100 - Special Topics in Computer Graphics**

Credit Hours: 1.00 to 6.00. A variable title, variable content course pertaining to problems and research in graphical methods and representation. Permission of instructor required. Typically offered Fall Spring Summer.

### **CGT 51200 - User Experience Design And Evaluation**

Credit Hours: 3.00. This course addresses the fundamental philosophy, processes, principles, and practices of user-centered design of computer systems humans interact with. Students learn how to design user experiences with computer systems by following the steps of user research, conceptual design, prototyping, and evaluation. Usability and interface design principles rooted in human perception and cognition provide the basis for evaluating design decisions. The course is platform-independent and encourages students to experiment with new and emerging technologies. No programming experience required. Typically offered Fall Spring Summer.

### **CGT 51300 - Interactive Multimedia Development And Research**

Credit Hours: 3.00. A survey of the interactive multimedia development process, knowledge base, and applications in business and industry. Particular attention is paid to research issues surrounding theoretical, technological, and interactive techniques, and validating those approaches through applied research. Emphasis is placed on the interdisciplinary nature of the development of new media tools. Typically offered Fall Spring Summer.

### **CGT 52000 - Computer Graphics Programming**

**Prerequisite(s):** CGT 51100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course provides a working knowledge of computer graphics programming using OpenGL and C++. OpenGL is the platform independent industrial standard APL and the leading edge technology for computer graphics application design. It has been used in the gaming industry, as well as in research and for scientific visualizations. The course focuses on creating real-time and interactive applications and is structured into several blocks; OpenGL introduction, modeling, texturing, transformations, lighting, and interactive application design. Students will develop various applications through the course focusing different aspects of computer graphics programming. Typically offered Fall Spring Summer.

### **CGT 58100 - Workshop In Computer Graphics Technology**

Credit Hours: 0.00 to 8.00. Advanced study of technical and professional topics. Emphasis is on new developments relating to technical, operational, and training aspects of industry and technology education. Typically offered Summer Fall Spring.

## **Computer and Information Technology**

### **CNIT 10100 - Orientation To Computer And Information Technology**

Credit Hours: 1.00. This is a resource seminar required for all incoming Computer & Information Technology (CIT) majors. It is intended to ease a freshman CIT major's entry into the CIT program at Purdue North Central and, in general, the Purdue University system. It introduces the student to some fundamental details such as how to study, time management, academic success strategies, general policies and procedures of the University, and the many resources available at the North Central campus. In addition, it is designed to provide students with information regarding career options in the Information Technology field. Required of all students entering the CIT program with less than 30 credit hours of college credit. Typically offered Fall Spring Summer.

### **CNIT 10500 - Introduction To C Programming**

Credit Hours: 3.00. This course is an introduction to computer programming using the "C" language. The emphasis is on structured programming principles, and understanding the basic concepts that apply to engineering problems. Among topics covered in this course are: problem solving using top down design, using flowcharts to explain the program logic, selection structure, repetition structure, bitwise operations, arrays, pointers, strings, passing arguments, and sequential files. Typically offered Summer Fall Spring.

### **CNIT 10700 - Computers And Software Packages**

Credit Hours: 1.00 to 4.00. Prerequisites vary with course content. Does not carry credit toward degree requirements in Computer Technology. Topics and skills associated with specific computer(s) and/or specific software package(s). Level of coverage varies according to audience. Various applications packages may be offered under this title. Typically offered Fall Spring Summer.

### **CNIT 12100 - Microcomputer Database Applications**

**Prerequisite(s):** CNIT 10700 FOR LEVEL UG WITH MIN. GRADE OF C AND (MA 11100 FOR LEVEL UG WITH MIN. GRADE OF D OR MA 15300 FOR LEVEL UG WITH MIN. GRADE OF D OR MA 15200 FOR LEVEL UG WITH MIN. GRADE OF D OR MA 15400 FOR LEVEL UG WITH MIN. GRADE OF D OR MA 22300 FOR LEVEL UG WITH MIN. GRADE OF D)

Credit Hours: 3.00. This course does not carry credit toward degree requirements in Computer Technology. A study of relational databases and their applications with special emphasis on the proper techniques of database construction. Instruction will center around learning how to design databases and operate a database management system in a Windows environment. Students will build projects and develop systems for the storage, manipulation, and retrieval of large amounts of data on the personal computer. This course is designed for non-Computer Technology majors who have had a modest exposure to computers. Typically offered Summer Fall Spring.

### **CNIT 12600 - Website Development And Internet Technologies**

**Prerequisite(s):** (MA 11100 FOR LEVEL UG WITH MIN. GRADE OF D OR MA 15200 FOR LEVEL UG WITH MIN. GRADE OF D OR MA 15300 FOR LEVEL UG WITH MIN. GRADE OF D OR MA 15400 FOR LEVEL UG WITH MIN. GRADE OF D OR MA 22300 FOR LEVEL UG WITH MIN. GRADE OF D) AND CNIT 10700 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. This course does not carry credit towards degree requirements in Computer Technology. A course in website design, construction, and implementation using a web editor and other tools. The main focus will be learning how to use web-editing programs to create practical, professional websites. Students will also study proper website design techniques, construct data-driven websites, and gain a general understanding of Internet technologies such as Internet communications, search engine strategies, website publishing techniques, etc. There will be some HTML and low-level coding, but the majority will be with the web editor. This course is designed for students who wish to learn how to construct basic websites for business and communication needs. Typically offered Summer Fall Spring.

### **CNIT 12700 - Microcomputer Spreadsheet Applications**

**Prerequisite(s):** CNIT 10700 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. This course does not carry credit towards degree requirements in Computer Technology. An expanded study of microcomputer spreadsheets. Students will learn how to properly design spreadsheets and the necessary commands to provide solutions to business-related problems. Significant time will be devoted to gain an understanding of how to develop spreadsheets that model the calculations involved in financial applications. This course is designed for non-Computer Technology majors who have had a modest exposure to computers. Typically offered Summer Fall Spring.

### **CNIT 12800 - Advanced Word Processing**

**Prerequisite(s):** CNIT 10700 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. This course does not carry credit toward degree requirements in Computer Technology. An extended study of word processing and its practical application in business and technology. A project-oriented approach will be utilized to illustrate word processing in solving specific information processing problems. Students will learn how to use word processing in a Windows environment to perform document enhancement, merging of documents and databases, incorporation of spreadsheet tables into documents, and applying desktop publishing techniques to documents. This course is designed for non-Computer Technology majors who have had a modest exposure to computers. Typically offered Summer Fall Spring.

### **CNIT 14100 - Internet Foundations, Technologies, and Development**

**Prerequisite(s):** CNIT 19000 FOR LEVEL UG WITH MIN. GRADE OF C- AND CNIT 10100 FOR LEVEL UG WITH MIN. GRADE OF C- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. (CGT 14100) This course explores the history, architecture and development of the World Wide Web. Current tagging and scripting languages are covered in a tool independent environment. Topics also include authoring tools, design, graphic and multimedia formats, and commerce, implementation and security issues. PC literacy required. Typically offered Summer Fall Spring.

### **CNIT 15500 - Introduction to Object-Oriented Programming**

**Prerequisite(s):** CNIT 19000 FOR LEVEL UG WITH MIN. GRADE OF C- AND CNIT 10100 FOR LEVEL UG WITH MIN. GRADE OF C- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. This course introduces fundamental software development concepts common to most programming languages. Topics include: problem solving and algorithm development, debugging, programming standards, variable, data types, operators, decisions, repetitive structures, modularity, array, user interface construction, software testing and debugging. A broad range of examples will be used throughout the course to show how each programming concept applies to real life problems. Typically offered Fall Spring Summer.

### **CNIT 17200 - Introduction To Application Development**

Credit Hours: 3.00. Students with little or no personal computing experience are encouraged to take the following: CPT 107 prior to CPT 172. This course introduces the development of information systems through the use of a database. Topics include business information systems, system and application development, database management systems, problem solving, logic, data types, and programming using database technology. Given a database design and application requirements, students design, construct, and test a personal computer information system. Typically offered Fall Spring.

### **CNIT 17500 - Visual Programming**

**Prerequisite(s):** MA 11100 FOR LEVEL UG WITH MIN. GRADE OF C- OR MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C- OR MA 15400 FOR LEVEL UG WITH MIN. GRADE OF C- OR MA 16700 FOR LEVEL UG WITH MIN. GRADE OF C- OR MA 22300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course introduces event-driven application development and programming using a visual programming environment. Topics include problem solving and program design, control structures, objects and events, user interface construction, documentation, and program testing. Credit may be established in only one of: CPT 15500 or CPT 17500 or CPT 25000. PC literacy required. Typically offered Fall Spring Summer.

### **CNIT 17600 - Information Technology Architectures**

**Prerequisite(s):** (MA 11100 FOR LEVEL UG WITH MIN. GRADE OF D- OR MA 15300 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) OR MA 15400 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) )

Credit Hours: 3.00. A conceptual and technological survey of information technology architectures inclusive of operating systems, network operating systems, distributed systems architectures, and distributed application architectures. Interoperability between these architectural components is explored. Current technology and trends in each architectural element are reviewed. PC literacy required. Typically offered Fall Spring Summer.

### **CNIT 18000 - Introduction To Systems Development**

**Prerequisite(s):** (MA 11100 FOR LEVEL UG WITH MIN. GRADE OF D- OR MA 15300 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) OR MA 15400 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) )

Credit Hours: 3.00. This course introduces information systems development. Topics include types of information systems, system development, database management systems, and problem solving. Students will read/create UML, ERD, and data flow diagrams to model information system objects, data, processes, and logic. Labs emphasize modeling and SQL/QBE querying to prepare students for later systems, programming, and database classes. Given user requirements students will design, construct, and test a personal computer information system. PC literacy required. Typically offered Summer Fall Spring.

### **CNIT 18800 - Microcomputer Applications Package**

Credit Hours: 3.00. This course does not carry credit toward degree requirements in computer technology. A study of relational databases and their applications with special emphasis on the proper techniques of database construction. Instruction will center around learning how to design databases and operate a database management system in a Windows environment. Students will build projects and develop systems for the storage, manipulation, and retrieval of large amounts of data on the personal computer. This course is designed for non-computer technology majors who have had a modest exposure to computers.. Typically offered Spring.

### **CNIT 19000 - CNIT Problem Solving**

**Prerequisite(s):** (MA 11100 FOR LEVEL UG WITH MIN. GRADE OF D- OR MA 15300 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) OR MA 15400 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) )

Credit Hours: 3.00. This course is designed to develop reasoning skills and analytic abilities necessary for a career in computer and information technology. It covers scientific reasoning and problem solving methods as well as logic development, Boolean connectives, computer math, and other topics related to application system development. It introduces students to fundamental computer concepts using hands-on exercises in the context of manipulating 3D objects in a virtual world. Typically offered Fall.

### **CNIT 22700 - Introduction To Bioinformatics**

Credit Hours: 2.00. Survey course in Bioinformatics for information technology specialists including topics such as: virtual bio-instrumentation, data reduction and mining algorithms and tools, data visualization, pattern matching, modeling and simulation, computational methods, and collaborative application environments. Typically offered Summer Fall Spring.

### **CNIT 23000 - Data Communications**

Credit Hours: 3.00. This course provides an introduction to both Local Area Networks (LANs) and Wide Area Networks (WANs). Modem technology, standards, and practices are explored. Three architectural models are used to illustrate protocol relationships and operational characteristics of both packet and circuit switched networks. Business issues from both provider and user perspectives are discussed. Current technology and trends in each architectural element are reviewed. Typically offered Fall Spring Summer.

### **CNIT 23500 - Management Information Systems And Collaboration Technology**

Credit Hours: 3.00. This course introduces management information systems, project management topics and technologies, and collaboration technologies. PC literacy required. Typically offered Fall Spring Summer.

### **CNIT 25500 - Programming For The Internet**

**Prerequisite(s):** MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C- AND CNIT 14100 FOR LEVEL UG WITH MIN. GRADE OF C- AND CNIT 15500 FOR LEVEL UG WITH MIN. GRADE OF C- AND CNIT 17600 FOR LEVEL UG WITH MIN. GRADE OF C- AND CNIT 18000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course introduces software development concepts common to modern object-oriented programming languages. Topics include: intermediate data types, decisions, repetitive structures; methods; arrays and collections; encapsulation; inheritance, and polymorphism; exception handling; data persistence; Database Management System (DBMS) connectivity; user interface construction; software testing and debugging; and working in teams. Typically offered Fall Spring Summer.

### **CNIT 26700 - Introduction To C++ Language Programming**

Credit Hours: 3.00. This course is an introduction to C++ language programming for persons with prior programming experience. Course topics include data types, control flow, operators and expressions, and an introduction to class construction including other object-oriented concepts and constructs. Applications are designed for business, manufacturing, or technology, depending on audience. Typically offered Fall Spring Summer.

### **CNIT 27200 - Database Fundamentals**

**Prerequisite(s):** CNIT 14100 FOR LEVEL UG WITH MIN. GRADE OF C- AND CNIT 15500 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 15300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A study of relational database concepts. These concepts include data design, modeling, and normalization; the use of Structured Query Language (SQL) to define, manipulate, and test the database; programmatic access to a database and practical issues that database developers must handle. Typically offered Fall Spring Summer.

### **CNIT 27600 - Systems Software And Networking**

**Prerequisite(s):** CNIT 17600 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 15300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Introduction to a wide range of topics in the networking field. Topics include: systems and network administration support practices, desktop and server support, security, disaster recovery, ethics, change management, help desks, networks, network operating systems, and directory services. The students will gain hands-on experience in the laboratory with installing and configuring network operating systems and application software. Typically offered Fall Spring.

### **CNIT 28000 - Systems Analysis And Design Methods**

**Prerequisite(s):** CNIT 27200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Comprehensive introduction to information systems development. Topics include the systems analyst, the systems development life cycle, methodologies, development technology, systems planning, project management, systems analysis, systems design, systems implementation, and systems support. Introduction to tools and techniques for systems development. Typically offered Fall Spring Summer.

### **CNIT 28500 - Topics In Programming Languages**

Credit Hours: 3.00. A programming course in one or more programming languages not covered in other CPT courses. Application of structured or event-driven program design, construction, debugging, testing, and documentation techniques. Topics, projects, and languages vary with course offering. Typically offered Summer Fall Spring.

### **CNIT 29000 - Computer Project**

Credit Hours: 1.00 to 4.00. Dependent on course content. Typically offered Fall Spring Summer.

### **CNIT 29500 - Object-Oriented Programming**

**Prerequisite(s):** CNIT 27200 FOR LEVEL UG WITH MIN. GRADE OF C- AND CNIT 25500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course focuses on using object-oriented programming languages in the development of modern, business applications. Topics include object-oriented design, encapsulation, object interfaces, inheritance, aggregation, abstract classes, polymorphism, data structures, and exception handling. Typically offered Summer Fall Spring.

### **CNIT 29900 - Topics In Computer And Information Technology**

Credit Hours: 1.00 to 6.00. Hours and subject matter to be arranged by staff. Individual study under directed leadership of professor. Primarily for students with special aptitudes. Permission of instructor required. Typically offered Fall Spring Summer.

### **CNIT 30400 - Operating Systems**

**Prerequisite(s):** CPT 27600 FOR LEVEL UG WITH MIN. GRADE OF C- OR CNIT 27600 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An introduction to computer operating systems and other systems software. Topics will include (but are not limited to): Internal computer systems (registers, instruction execution, cache), utility programs, memory management virtual memory, processor scheduling and security. Current operating systems will be discussed. . Typically offered Fall Spring.

### **CNIT 33000 - Local Area Networking And Systems Administration**

**Prerequisite(s):** CNIT 30400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course provides a comprehensive introduction to Local Area Networks (LANs). Topics include the study of LAN communication protocols, the Open Systems Interconnect (OSI) model, client/server operating system architectures, basic security services, and introductory systems administration concepts. Typically offered Summer Fall Spring.

### **CNIT 34300 - Advanced System And Network Administration**

**Prerequisite(s):** CNIT 33000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course focuses on the tasks and issues involved in the installation and administration of distributed computing systems. Topics include the administration of network operating systems, UNIX system administration, and network system interoperability. In the laboratory portion of the course, students implement and maintain local area network and UNIX servers. Typically offered Fall Spring Summer.

### **CNIT 35000 - Object-Oriented Programming**

**Prerequisite(s):** CNIT 27200 FOR LEVEL UG WITH MIN. GRADE OF C- AND CNIT 25500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course focuses on using object-oriented programming languages in the development of modern business applications. Topics include object-oriented design, encapsulation, object interfaces, inheritance, aggregation, abstract classes, polymorphism, data structures, and exception handling. Credit cannot be earned in both CNIT 29500 and CNIT 35000. Typically offered Fall Spring Summer.

### **CNIT 35500 - Software Development For Mobile Computers**

Credit Hours: 3.00. This is an advanced programming course that teaches students the skills necessary to develop applications for mobile computing devices (e.g. Smartphones and tablet computers). Combining theory and practice, this course gives students hands-on experience with the latest technologies, tools and techniques used to develop mobile software solutions for business and entertainment. Typically offered Fall Spring Summer.

### **CNIT 36100 - Software Redesign Using Cobol**

**Prerequisite(s):** CNIT 25500 FOR LEVEL UG WITH MIN. GRADE OF C- OR CNIT 26700 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An introduction to COBOL programming with an emphasis on redesign of legacy COBOL applications to extend their useful lifetime in contemporary organizations. Topics include user interface redesign, structured design, object-oriented programming, and transition from conventional files to databases. Students learn to analyze existing programs to isolate legacy code problems, develop and test solutions, and integrate solutions into software libraries. Typically offered Fall Spring Summer.

### **CNIT 36300 - Open Source Technologies**

**Prerequisite(s):** CNIT 27200 FOR LEVEL UG WITH MIN. GRADE OF D- AND CNIT 28000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An advanced course in programming, database management systems, and dynamic web page construction using open source technologies. Students will develop programming skills in the current open source programming languages. Emphasis will be on server-side programming and the integration of database management systems to create data-driven web sites. Other supporting open source tools will be examined and employed as appropriate. Permission of department required. Typically offered Fall Spring Summer.

### **CNIT 37200 - Database Programming**

**Prerequisite(s):** CNIT 27200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course explores advanced database programming techniques for enterprise-wide databases and their implementation. It uses programmatic extensions to Structured Query Language (SQL) supported by today's enterprise-class Relational Database Management Systems (RDBMS). Topics include advanced data manipulation, storage considerations, data transformation techniques to enhance interoperability of data, stored procedure and trigger design and implementation; and query optimization. Typically offered Fall Spring.

### **CNIT 38400 - Requirements Discovery & Modeling**

**Prerequisite(s):** CNIT 28000 FOR LEVEL UG WITH MIN. GRADE OF C- AND (CNIT 29500 FOR LEVEL UG WITH MIN. GRADE OF C- OR CNIT 35000 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 3.00. This course is an advanced study of systems analysis and design focusing on object-oriented methods, techniques, and tools. Topics include object-oriented technology, object-oriented methods and techniques to analyze a business problem and design and implement a solution, use-cases, object models, requirements gathering, effective communications, project management, and cost-benefit analysis. Emphasis is placed on working in a team environment to model and design a solution to a real-life business problem. Typically offered Fall Spring.



### **CNIT 38500 - Advanced Design Techniques**

**Prerequisite(s):** CNIT 38400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course is an advanced study of system design methods and techniques used by systems analysts to develop information systems. Topics include rapid development concepts, application architecture and system design, transition from object-oriented analysis and models, graphical user interface design, web interface design, prototyping, and commercial software package integration. . Typically offered Spring.

### **CNIT 39200 - Enterprise Data Management**

**Prerequisite(s):** CNIT 27200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course examines advanced design techniques and physical issues relating to enterprise-wide data management. Topics include advanced design concepts, enhanced modeling and constructs, objects and unstructured and semi-structured data in databases, data management in non-business contexts, implementation of an enterprise data architecture, and data quality and stewardship.. Typically offered Fall Spring.

### **CNIT 40400 - Advanced Networking Topics**

**Prerequisite(s):** CNIT 34300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course requires the students to design and implement a network, using knowledge they have gained in their previous coursework. Students will use analysis and design techniques along with design software to draw up a network according to given specifications. They will then implement the network. Typically offered Fall Spring.

### **CNIT 45500 - Network Security**

**Prerequisite(s):** CNIT 34300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course explores business, conceptual, and technological aspects of network security for voice and data networks. The course deals with the analysis, design, implementation, and management issues surrounding effective network security. Key concepts and technology include virus protection, firewalls, authentication, encryption, wireless security, security protocols, physical security, and network security architecture and policy development. Typically offered Fall Spring Summer.

### **CNIT 47500 - Electronic Commerce and Business Implementation**

**Prerequisite(s):** CNIT 35000 FOR LEVEL UG WITH MIN. GRADE OF C- OR CNIT 29500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course is an in-depth study of electronic commerce and electronic business implementation. The focus is on e-business topics and concepts including business models, electronic payment systems, infrastructure, implementation concerns, design criteria, solution of business problems through case studies, and related Web topics. Students will develop web-based applications that support e-business activities. Typically offered Fall Spring.

### **CNIT 48000 - Managing Information Technology Projects**

**Prerequisite(s):** CNIT 37200 FOR LEVEL UG WITH MIN. GRADE OF C- AND CNIT 33000 FOR LEVEL UG WITH MIN. GRADE OF C- AND CNIT 35000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course introduces the application of knowledge, skills, tools, and techniques that project managers use to plan, staff, estimate, and manage information technology projects. Special emphasis is placed on learning and applying the concepts of managing scope, risk, budget, time, expectations, quality, people, communications, procurement, and externally provided services. Students will apply project management technology and techniques to business problems. Typically offered Fall Spring.

### **CNIT 48100 - Information Systems Management**

**Prerequisite(s):** CNIT 37200 FOR LEVEL UG WITH MIN. GRADE OF C- AND (CNIT 37200 FOR LEVEL UG WITH MIN. GRADE OF C- OR CNIT 33000 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 3.00. The purpose of this course is to provide the student with an understanding of the issues and challenges in managing information systems activities. This course will identify the various information system management functions; their relationship to organizational functions; their interaction with various organizational units; and methods for achieving the objectives relevant to each. Typically offered Summer Fall Spring.

### **CNIT 48500 - Topics In Information Systems And Technology**

**Prerequisite(s):** CNIT 48000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course will require students to analyze, design, implement, test, and document a complete computer-based information system by using knowledge and techniques acquired from their previous coursework. Students will work on their assigned projects as part of a team. Typically offered Summer Fall Spring.

## **CNIT 49900 - Topics In Computer And Information Technology**

Credit Hours: 1.00 to 3.00. Hours and subject matter to be arranged by staff. Possible individual study under directed leadership of professor. Permission of instructor required. Typically offered Fall Spring Summer.

## **Computer Engineering Technology**

### **CPET 19000 - Problem Solving With MATLAB**

Credit Hours: 1.00 to 4.00. A study of the principles and practice of problem solving using MATLAB. Topics include MATLAB basics, functions and variables, file input and output, user-defined functions and program design, complex data manipulation, graphical user interface, and technical problem solving applications, etc. The students shall gain hands-on experience through several programming assignments, and practice strategies for collaborative problem solving such as creating specifications, brainstorming, sketching an idea, solution evaluation, and solution testing. Typically offered Summer Fall Spring.

### **CPET 29900 - Selected Computer Engineering Technology Subject**

Credit Hours: 1.00 to 4.00. Hours and subject matter to be arranged by staff. An individual design, special topics course, sophomore-level research and/or analytical project in any one of the following areas: computer-based technical problem solving, digital electronics, analog electronics systems, networking systems, computer programming, computer-based problem solving, embedded systems, and system integration. Typically offered Summer Fall Spring.

### **CPET 37500 - Microcomputer Based Digital Systems**

**Prerequisite(s):** ECET 15900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00 or 4.00. A study of the microprocessor system bus; the architecture and interfacing of various processor, memory, and input-output devices; the instruction set; assembly language programming; and design of microprocessor-based digital network. Typically offered Fall Spring.

### **CPET 41100 - Microcomputer Interfacing**

**Prerequisite(s):** (CPET 37500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECET 20900 FOR LEVEL UG WITH MIN. GRADE OF D-)

Credit Hours: 4.00. A study of microprocessor interfacing techniques and components required to assemble a typical microcomputer system. Emphasis on serial I/O and parallel I/O chips; peripheral interfacing: LED display, keyboard, CRT display, floppy disk, D/A's, A/D's, and stepping motor. Typically offered Fall Spring.

### **CPET 49900 - Computer Engineering Technology**

Credit Hours: 1.00 to 4.00. Hours and subject matter to be arranged by staff. An extensive individual design, special topics course, research and/or analytical project in any one of the following areas: networking operating systems, computer networking, distributed computing, client/server applications, wireless communications, wide area network design, network system management, computer and network security. Internet system programming, and industrial applications of networking, control, and monitoring. Collaboration with representatives of industry, government agencies, or community institutions is encouraged. Typically offered Fall Spring Summer.

## **Computer Information Systems**

### **CIS 10300 - Survey Of Information Systems And Information Technology**

Credit Hours: 3.00. An introduction to information technology and computer information systems designed for department majors. Topics include university resources, career opportunities, ethics, computer concepts, problem solving techniques, logic, system development life cycle, program development life cycle, database management systems, computer math, security and privacy issues, networks, and file management. Typically offered Summer Fall Spring.

### **CIS 11100 - Introduction To Human Computer Interaction**

Credit Hours: 3.00. This course introduces foundational concepts of human computer interaction. Students focus on human-centered software development, usability testing, and understanding interaction styles. Typically offered Summer Fall Spring.

### **CIS 14000 - Introduction to Networks**

Credit Hours: 3.00. The course is an introduction to computer networks. How networks are used in business and industry environments will be explained. The various types of communication equipment and cables used in networks will be explained, the difference between local area and wide area networks is introduced, analog and digital transmission is explored, and the concepts involved in transmitting data are discussed. Network design and the implementation of those designs are an integral part of the course. Students will use a graphic software package to create network diagrams. Typically offered Summer Fall Spring.

### **CIS 16600 - Introduction To Programming**

**Prerequisite(s):** MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. This course is an introduction to computer programming. Emphasis in this course is on the program development life-cycle, structured programming and top-down design. Topics include identifiers, data types, arithmetic

operators, if, if/else, looping, case selection, modules, arrays, and an introduction to classes. Extensive programming exercises are required. Typically offered Fall Spring Summer.

### **CIS 18000 - Introduction To Project Management**

Credit Hours: 3.00. This course introduces foundational concepts of project management. Students focus on components of IS project management, the impact of IS projects on companies and basic theories of how to manage IS projects. Typically offered Summer Fall Spring.

### **CIS 18700 - Applied Computer Operating Systems**

**Prerequisite(s):** ECET 11000 FOR LEVEL UG WITH MIN. GRADE OF D- OR EET 11000 FOR LEVEL UG WITH MIN. GRADE OF D- OR CIS 21000 FOR LEVEL UG WITH MIN. GRADE OF D- AND MA 15300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is an introduction to computer operating systems and other systems software. Topics include: supervisor organization, utility programs, job control language, memory management and process management. Labs include installations of client based operating systems, like: Windows 9x, Windows 2000, Windows NT and Unix/Linux. Typically offered Summer Fall Spring.

### **CIS 20000 - Introduction To Information Systems Policies**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An introduction to the need for and creation of policies for information systems and their impact on business. Course content will include information security policies, disaster recovery policies, and other related policy topics. Typically offered Summer Fall Spring.

### **CIS 20400 - Introduction To Computer-Based Systems**

Credit Hours: 3.00. An introduction to computer-based systems with an emphasis on how computers can assist the user. Computer concepts, terminology, and a survey of programming languages, operating systems, word processing, spreadsheets, database, communications, graphics, and Internet are included. Extensive laboratory exercises are assigned. Typically offered Fall Spring Summer.

### **CIS 20500 - Information Systems For Management**

**Prerequisite(s):** CIS 20400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An integrated approach to Management Information Systems with emphasis on business systems analysis, design, development and implementation. A case problem will be presented which the students will implement via the above approach. Typically offered Fall Spring Summer.

### **CIS 21000 - Personal Computer Technology**

**Prerequisite(s):** CIS 20400 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. The personal computer is explored at the application level. Topics covered include an in-depth study of DOS commands and application software review. An overview of digital circuits the internal structure of microcomputers, microchip differences, PC communications, microcomputer operating systems and peripheral devices are discussed in relation to the evaluation of PC hardware and software. New technology topics round out the course. Typically offered Fall Spring.

### **CIS 21500 - Structured Program Development**

**Prerequisite(s):** MA 15300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An introduction to the development cycle, logic diagrams, debugging procedures, top-down design, top-down programming, is used to implement program solutions. Extensive programming exercises are assigned. Typically offered Fall Spring Summer.

### **CIS 21600 - Visual Programming**

**Prerequisite(s):** CIS 21500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course is an introduction to object-oriented program development. An overview of object-oriented analysis and design techniques and terminology is presented. Object-oriented programming techniques are implemented using a visual programming environment. Extensive written homework and computer laboratory exercises are assigned. Computer program solutions are implemented using a visual programming environment. Typically offered Fall Spring.

### **CIS 21700 - Visual Basic Programming**

**Prerequisite(s):** CIS 16600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course emphasizes VB program development. An overview of analysis and design techniques and terminology is presented. Object-oriented programming techniques are implemented using a visual programming

environment. Numerous written homework and computer laboratory exercises are assigned. Typically offered Fall Spring Summer.

### **CIS 21800 - C# Programming**

Credit Hours: 3.00. Emphasis in this course will be on the object-oriented paradigm using C#. Topics include definition of classes and objects, definition of class methods, definition of functions, definition of derived classes, inheritance, polymorphism, exception handling, and an introduction to development of Window's applications. Extensive programming exercises using C# are required. Typically offered Summer Fall Spring.

### **CIS 23000 - Data Communications**

**Prerequisite(s):** ISM 10200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. The role of data communications in modern business environments is explored. Real time systems and data transmission techniques are covered. Topics include terminal equipment, communication media, data codes, error detection and correction, local area versus wide area networks, digital transmission techniques, terminal software, and the Open Systems Interconnection (OSI) model for network software. The primary emphasis in the course is on software aspects. Typically offered Summer Fall Spring.

### **CIS 23001 - Information Systems Infrastructure**

Credit Hours: 3.00. This course introduces principles of computer information systems infrastructure. Students will gain an understanding of hardware and software aspects of IS infrastructure. Besides fundamental concepts of computer hardware and operating systems, students will be introduced to various emerging concepts such as virtualization, cloud computing, databases, computer networking, firewalls, virtual private networks, disaster recovery, network security, and cybersecurity. Typically offered Fall Spring Summer.

### **CIS 24100 - Foundations Of Web Design And Development**

**Prerequisite(s):** MGMT 21100 FOR LEVEL UG WITH MIN. GRADE OF C- OR ISM 21100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course is an introduction to Web design and development. It provides an overview of the Internet, intranets, and extranets. Students learn how to use the Web Development Life Cycle and how to test Web sites for usability. Students use Hypertext Markup Language (HTML), Cascading Style Sheets (CSS), and other Web programming languages to create Web pages. The focus is on the impact of Web technology on businesses today. Extensive lab exercises on introductory and advanced Web development techniques are assigned. Typically offered Fall Spring Summer.

### **CIS 24200 - E-Commerce Architecture**

**Prerequisite(s):** CIS 24100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is an introduction to client/server and web-base architecture. Topics include the history and evolution of client/server systems, standards, client/server processing models the role of the client and of the server, middleware, multi-tiered architectures, methods of data distribution, designing a client/server system, distributed RDBMS, transaction processing and E-commerce. New developments, trends and uses for E-commerce are discussed. Typically offered Fall Spring Summer.

### **CIS 25200 - Systems Analysis And Design**

**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C- AND (ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 3.00. An introduction to the procedural requirements of the system development cycle (SDLC). Through actual problem solution, the student is introduced to the techniques of system planning, analysis, design, implementation, and evaluation. This course prepares students for careers as business analysts and technical analysts. Typically offered Fall Spring Summer.

### **CIS 25300 - Applied Database Techniques**

**Prerequisite(s):** ISM 21100 FOR LEVEL UG WITH MIN. GRADE OF C- OR MGMT 21100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An introduction to the applied aspects of database systems and their associated languages. Topics include database terminology and concepts including data modeling, data dictionaries, redundancy, independence, security, privacy, and integrity. Extensive laboratory exercises are assigned. Typically offered Fall Spring Summer.

### **CIS 25500 - Fundamentals Of Information Assurance**

**Prerequisite(s):** CIS 14000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course provides an integrated, comprehensive coverage of the information security policies, process, techniques, security tools, and awareness vital to information security. The classroom instruction provides a

practical approach through case scenarios of both the principles and practice of information, computer, and network security for the enterprise and home. Typically offered Summer Fall Spring.

### **CIS 26100 - RPG Programming**

**Prerequisite(s):** CIS 21500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An introduction to programming in RPG/400. Extensive programming exercises are assigned including report generation, control breaks and the creation and maintenance of indexed files. Typically offered Fall Spring.

### **CIS 26300 - Java Programming**

**Prerequisite(s):** CIS 16600 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An introduction to the Java programming language, including operators, data types, and language syntax; applets versus applications; object-oriented programming; classes, methods, and inheritance; utilizing a graphical user interface; event-driven programming; and Java development and execution environments. Students should be familiar with structured programming concepts and top-down program development. Extensive homework and computer laboratory exercises are assigned. Typically offered Fall Spring.

### **CIS 26500 - Cobol Programming**

**Prerequisite(s):** CIS 16600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A study of the programming language, ANS COBOL, which is especially useful for file and table handling and extensive input and output operations. The student will study the structure and details of COBOL and perform programming exercises dealing with practical applications like table handling, record selection and reporting. Typically offered Fall Spring Summer.

### **CIS 26600 - C++ Programming**

**Prerequisite(s):** CIS 16600 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Emphasis in this course will be on the object-oriented paradigm using C++. Topics include definition of class, data abstraction, member functions, friend functions, this pointer, static class member, operator overloading, inheritance, virtual function and polymorphism, template, exception handling, elementary data structures, reusability, and introduction to Standard Template Library. Extensive programming exercises in C++ are required. Typically offered Fall Spring Summer.

### **CIS 26700 - Software Engineering Requirements Definition And Quality**

**Prerequisite(s):** CIS 25200 FOR LEVEL UG WITH MIN. GRADE OF D- AND CIS 26600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course introduces basic concepts and principles of software requirements engineering, its tools and techniques, and methods for modeling software systems. It looks at how software quality assurance and configuration management are performed and how software process improvement is maintained in order to assure the highest possible quality in the development of software. Typically offered Fall Spring.

### **CIS 27700 - Software Engineering Design, Construction & Evolution**

**Prerequisite(s):** CIS 26700 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course covers the methods and techniques used in the design of software systems. It includes architectural and detailed design, with an emphasis on object-oriented methods, the design process, and the design documentation and review. It also examines issues, methods, and techniques associated with constructing software, given an architectural and detailed design, and for maintaining software over its lifetime. Typically offered Fall Spring Summer.

### **CIS 28600 - Computer Operating Systems I**

**Prerequisite(s):** ECET 11000 FOR LEVEL UG WITH MIN. GRADE OF D- OR CIS 21000 FOR LEVEL UG WITH MIN. GRADE OF D- OR EET 11000 FOR LEVEL UG WITH MIN. GRADE OF D- AND MA 15300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An introduction to computer operating systems and other system software. Topics include: supervisor organization, utility programs, job control language, memory management and process management. Typically offered Summer Fall Spring.

### **CIS 28800 - LAN Technology**

**Prerequisite(s):** CIS 23000 FOR LEVEL UG WITH MIN. GRADE OF D- AND CIS 28700 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is an intermediate networking course and local area networking and design course. This

is a laboratory and lecture course that covers the topics of topologies, networking protocols, hardware, and software of the local area network. Students will evaluate networking technologies, design local area networking solutions, and implement local area networking solutions. Typically offered Summer Fall Spring.

### **CIS 29000 - Computer Project**

Credit Hours: 1.00 to 4.00. Independent study for sophomore students who desire to execute a computer-oriented project. Typically offered Fall Spring Summer.

### **CIS 30100 - Data And File Structures**

**Prerequisite(s):** CIS 26600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Methods of organizing, linking, and retrieving information stored in computer memory or auxiliary storage: arrays, lists, stacks, queues, linked lists, trees. File organization and access: sequential, random, indexed, linked, inverted, partitioned. Associated data manipulation algorithms: data entry, searching, retrieval, sorting; algorithmic analysis. Selected applications. Typically offered Fall Spring Summer.

### **CIS 30200 - Information Systems Budgeting And Procurement**

Credit Hours: 3.00. An introduction to the budgeting and procurement processes and issues and their impact on business. Course content will include vendor selection and management, managing costs on IS projects and planning IS budgets. Typically offered Summer Fall Spring.

### **CIS 30400 - Advanced Computer Utilization**

**Prerequisite(s):** CIS 20400 FOR LEVEL UG WITH MIN. GRADE OF C AND COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course is a continuation of CIS 20400. The objectives of the course are to teach students how to obtain and analyze information, apply advanced application skills, research a topic, generate reports and present the results. These computer skills are required in many disciplines today. Typically offered Fall Spring.

### **CIS 31000 - Server Administration**

**Prerequisite(s):** CIS 28800 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course will prepare students for being a network and server administrator. Specific topics of the course will include administration of commercial operating systems in a commercial environment. Students will have practical knowledge on how to install, configure, and implement a server solution. Students will be exposed to the theory of server technologies, directory services, and management theory of server systems. Typically offered Spring Fall Summer.

### **CIS 31200 - Legal Issues In Information Technology**

**Prerequisite(s):** CIS 25500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course focuses on legal issues surrounding Information Technologies. Current legal issues in information technology are addressed including elements of contracting, payment systems, digital signatures, privacy concerns, intellectual property, IT torts and criminal liability including hacking, computer trespass and fraud. Examination of legal issues including privacy, systems abuse and legal practices in Information Technology will be explored. Typically offered Summer Fall Spring.

### **CIS 31500 - Wireless Network Technology**

**Prerequisite(s):** CIS 28800 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course will introduce the fundamentals of wireless technology with an emphasis on information technology and implementation issues. Wireless communications theory, licensing standards, limitations, and emerging technologies will be explored in depth. This course has an extensive laboratory component and students will implement several wireless local area networking technologies. Typically offered Summer Fall Spring.

### **CIS 32300 - Object-Oriented Systems Analysis And Design**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This is an introduction to the object-oriented analysis and design technique for systems development. Topics include problem analysis, data collection techniques, system and program design techniques. Typically offered Summer Fall Spring.

### **CIS 34100 - Advanced Web Design And Development**

**Prerequisite(s):** CIS 24100 FOR LEVEL UG WITH MIN. GRADE OF C- AND CIS 16600 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course introduces students who have learned the basics of HTML to server side web development technologies. Students learn to build real-world, dynamic websites using PHP and MySQL. Extensive

programming exercises on advanced Web design and development techniques are assigned. Typically offered Fall Spring Summer.

### **CIS 34200 - Multimedia For Web Developers**

**Prerequisite(s):** CIS 24100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course is an introduction to the creation and use of graphics, animation, video and audio on the Web. Students will design, create and deploy several instances of graphics, video and audio on a series of Web pages. Topics include graphics, video and audio file formats, creating multimedia content, formatting images on Web pages, animation and video, and the use of graphics for purposes such as buttons, dividers, and image maps. Typically offered Fall Spring Summer.

### **CIS 34500 - Computer Graphics**

**Prerequisite(s):** CIS 16600 FOR LEVEL UG WITH MIN. GRADE OF D- AND MA 15300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A survey of computer hardware used to make graphic displays including printers, plotters, and cathode ray tubes. Programming techniques for plotting lines and special symbols and the organization and representation of data, and a survey of applications. Typically offered Fall Spring.

### **CIS 35100 - Decision Support And Expert Systems**

Credit Hours: 3.00. Introduction to techniques employed in supporting decision-making in business, industry and government. Various types of models are developed and solved using manual and computerized techniques. Students analyze, prepare a model for, and develop solutions for selected types of problems. Decision support software packages may be specified to implement some solutions. Topics include an overview and relationship to Artificial Intelligence, project management, optimization techniques, statistical analysis, graphical analysis, simulation techniques, building management models, and presentations of results. Typically offered Spring Summer.

### **CIS 35300 - Advanced Database Methods**

**Prerequisite(s):** CIS 16600 FOR LEVEL UG WITH MIN. GRADE OF C- AND (CIS 25300 FOR LEVEL UG WITH MIN. GRADE OF C- OR ISM 30800 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 3.00. Topics include processing statements of SQL blocks, procedures, functions, packages, dependencies, database triggers, built-in packages, dynamic SQL and Object Technology and code tuning. Students acquire advanced skills in an applied environment reinforcing concepts and techniques of SQL programming. Typically offered Summer Fall Spring.

### **CIS 35400 - Relational And Object-Oriented Database Modeling**

**Prerequisite(s):** CIS 20400

Credit Hours: 3.00. This course discusses the role of databases in the System Development Life Cycle with an emphasis on relational databases and object-oriented database analysis and design techniques-logical data modeling. Additional topics include the functions and components of state-of-the-art commercial DBMS software, distributed database, database models, and the role and function of the Database Administrator. Students will be assigned data modeling projects. Typically offered Fall.

### **CIS 35500 - Database Management System Implementation**

**Prerequisite(s):** CIS 35400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course emphasizes the implementation of a relational DBMS. Students will use fourth generation languages and tools to implement design specifications. Additional topics include the implementation of physical data models, backup/ recovery facilities, concurrency control, integrity services and security mechanisms. Students will be assigned implementation projects. Typically offered Spring.

### **CIS 35600 - Topics In Database Programming**

**Prerequisite(s):** CIS 26100 FOR LEVEL UG WITH MIN. GRADE OF D- OR CIS 26300 FOR LEVEL UG WITH MIN. GRADE OF D- OR CIS 26500 FOR LEVEL UG WITH MIN. GRADE OF D- OR CIS 26500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is an introduction to accessing a relational database using a programming language such as COBOL, C++, JAVA or RPG. focus is on one language during the semester. Topics include defining and controlling transactions, sequential access techniques, use of primary and secondary keys, cursors, report generation, updating techniques, and dynamic SQL. This course is a variable title course. This course can be repeated, with a different title, for credit. Typically offered Fall Spring Summer.

### **CIS 35700 - Data Warehousing/Data Mining**

**Prerequisite(s):** CIS 35400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course is an overview of data warehousing and data mining together with in-depth explanations of critical issues in planning, design, deployment and ongoing maintenance of data warehousing. Students will gain a clear understanding of techniques for extraction of data from sources, data transformations, data staging, data warehouse architecture and infrastructure and various methods for delivery. Additional topics will include an overview of On-Line Analytical Processing, Knowledge Discovery Database Process Model, Expert Systems, Neural Networks, Regression Analysis, Intelligent Agents as they relate to data warehousing. Typically offered Summer Fall Spring.

### **CIS 36300 - Advanced Java Programming**

**Prerequisite(s):** CIS 26300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. The course is a continuation of CIS 26300. Topics include multi-threading, client/server, database access and exception handling. Typically offered Fall Spring Summer.

### **CIS 36500 - Topics In Cobol**

**Prerequisite(s):** CIS 26500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Advanced COBOL topics concerning indexed files with variable length records, direct files, sophisticated table handling employing subscripting and indexing, simulation and program use. The Report Writer feature of COBOL is also introduced. Programming exercises include advanced file maintenance techniques and menu-driven programs. subprogram use. The Report Writer feature of COBOL is also introduced. Programming exercises include advanced file maintenance techniques and menu-driven programs. Typically offered Fall.

### **CIS 38300 - On-Line Programming Techniques**

**Prerequisite(s):** CIS 36500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An introduction to Command Level CICS used to illustrate the concepts and considerations required in the design development and implementation of online application programs. CICS commands, program design, programming, CICS commands, program design, programming, screen maps, debugging and testing are covered utilizing business-oriented assignments. screen maps, debugging and testing are covered utilizing business oriented assignments. Typically offered Fall Spring Summer.

### **CIS 38400 - Database Integration**

**Prerequisite(s):** CIS 35500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This capstone course combines database skill sets and techniques, providing students with an integrated comprehensive experience of various database platforms and programming languages. Topics include the latest development tools, database features and strategies, embedded SQL programming, administrative APIs, CLI.ODBC, and OLE DB programming, Java programming, stored procedures and more. Students develop database applications in a variety of environments using a variety of programming tools, maximizing database performance, availability, and efficiency. Typically offered Summer Fall Spring.

### **CIS 38900 - Novell LAN Administration**

**Prerequisite(s):** CIS 18700 FOR LEVEL UG WITH MIN. GRADE OF D- AND CIS 23000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is a continuation of CIS 388. The emphasis in the course is on illustrating the tasks that the LAN administrator must perform to maintain a NOVELL network. Topics include the SYSCON menu, menu creation, trustee assignments, assigning rights to users, file directories, installing software on the file server, login scripts and network monitoring software. Typically offered Fall Spring Summer.

### **CIS 39300 - Industrial Practice III**

**Prerequisite(s):** CIS 29200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 1.00. Practice in industry with written reports of the practice by the co-op student. Typically offered Fall Spring Summer.

### **CIS 39400 - Industrial Practice IV**

**Prerequisite(s):** CIS 39300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 1.00. Practice in industry with written reports of the practice by the co-op student. Typically offered Fall Spring Summer.

### **CIS 39500 - Industrial Practice V**

**Prerequisite(s):** CIS 39400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 0.00. Practice in industry with written reports of the practice by the co-op student. Typically offered Fall Spring Summer.



### **CIS 40000 - Information Systems Strategic Planning**

**Prerequisite(s):** CIS 20000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Information systems are covered and their relationship to the overall strategic business plans. Course content will include enterprise resource plans and business process redesign. Typically offered Summer Fall Spring.

### **CIS 41200 - Human-Computer Interaction**

**Prerequisite(s):** CIS 11100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is designed for students who desire to understand the complex interaction of people with machines. Students will learn how to design, manage, maintain, train, refine, and evaluate the user interface of interactive systems. Serious users of interactive systems will find that the course gives them a more thorough understanding of the design questions for user interfaces. Typically offered Summer Fall Spring.

### **CIS 41300 - Information Systems Auditing and Control**

**Prerequisite(s):** CIS 25200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An introduction to the fundamentals of Information Systems auditing. Emphasis on understanding IS controls, the types of IS audits and the concepts and techniques used in IS audits. Exposure to risk assessment and professional standards in the field of IS auditing are provided. Typically offered Spring Summer Fall.

### **CIS 41400 - Information Systems Professionalism And Ethics**

**Prerequisite(s):** CIS 25200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. The course will cover ethical issues regarding the development of software and information systems and discuss the impact of these systems on society and businesses. Professional societies and their roles in information systems including their professional and ethical codes will be addressed. Typically offered Fall Spring Summer.

### **CIS 41600 - Wireless Security**

**Prerequisite(s):** CIS 31500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course will prepare students for being a wireless network administrator. Specific topics of the course will include encryption, VPN technologies over wireless, authentication mechanisms, and wireless topologies for security, radiation and signal propagation techniques, site analysis, monitoring and troubleshooting, and current threats against wireless devices. The course will cover advanced concepts specific to wireless security technologies and the implementation of protective technologies in the wireless realm. Typically offered Summer Fall Spring.

### **CIS 42000 - Wide Area Network Implementation**

**Prerequisite(s):** CIS 31000 FOR LEVEL UG WITH MIN. GRADE OF C- AND CIS 28700 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course is an advanced networking course and enterprise level architecture and design course. Students will evaluate networking technologies, design enterprise level networking solutions, and implement enterprise networking solutions. Typically offered Fall Spring Summer.

### **CIS 42100 - Risk Assessment For Information Assurance**

**Prerequisite(s):** CIS 31200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course focuses on analysis of Risk Assessment models associated with information technology framework. This course describes threats associated with information technology security. IT security threats from Hardware and Software level as well as countermeasures for reducing those threats are explored in detail. Countermeasures for Information Security Vulnerabilities from the framework of People, Processes, Computer level, Network technology, and Encryption are discussed. Typically offered Summer Fall Spring.

### **CIS 42200 - Network Management**

**Prerequisite(s):** CIS 42000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course provides an integrated, comprehensive, up-to-date coverage of the techniques, standards, models for the network management vital to communications, networking, and services including current trends of next generation converged networks and emerging 4GM wireless technologies. The classroom instruction provides a practical approach of both the principles and practice of network management from different perspectives. Typically offered Summer Fall Spring.

### **CIS 42300 - Structured Systems Analysis And Design**

**Prerequisite(s):** CIS 35400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This is the first semester of a two-semester sequence in the advanced study of the system development life cycle. Topics include analysis and design using structured techniques to analyze existing information systems, preparation of the associated structured documentation to design new computer information systems, and preparation of the technical specification to implement the system. Typically offered Fall Spring.

### **CIS 42400 - Object Oriented Analysis and Design**

**Prerequisite(s):** CIS 35400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This is an in-depth study of the system development life cycle using object oriented analysis and design techniques. Other topics include project management, software quality assurance, computer-assisted software engineering (CASE), and other state-of-the-art techniques that the software engineering profession introduces to support the systems development process. Typically offered Summer Fall Spring.

### **CIS 42500 - Information Systems Change Management**

**Prerequisite(s):** CIS 40000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The course covers the purpose and techniques of IS change management and its impact on business planning and functions. Typically offered Summer Fall Spring.

### **CIS 42600 - Applications Software Development Project**

**Prerequisite(s):** CIS 35300 FOR LEVEL UG WITH MIN. GRADE OF C- AND CIS 34100 FOR LEVEL UG WITH MIN. GRADE OF C- AND CIS 46300 FOR LEVEL UG WITH MIN. GRADE OF C- AND ISM 48600 FOR LEVEL UG WITH MIN. GRADE OF C- AND ISM 30700 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A capstone course integrating the knowledge and abilities gained through the other computer-related courses in the curriculum within a comprehensive system development project. Typically offered Summer Fall Spring.

### **CIS 42700 - System Develop Project**

Credit Hours: 3.00. This course represents a capstone course that integrates the knowledge, skills and abilities gained through the computer-related courses in the curriculum within a comprehensive system development project. Typically offered Fall Spring Summer.

### **CIS 44000 - Advanced Network Design**

**Prerequisite(s):** CIS 31000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course will emphasize common carrier systems, ATM, Systems Network Architecture (SNA), Fiber Distributed Data Interface (FDDI), and Integrated Services Digital Network (ISDN). New developments in data communications will be discussed. Students will design and simulate a wide area network using a simulation software package. Typically offered Spring.

### **CIS 44100 - Web Server Management**

**Prerequisite(s):** CIS 14000 FOR LEVEL UG WITH MIN. GRADE OF D- AND CIS 24100 FOR LEVEL UG WITH MIN. GRADE OF D- AND CIS 28600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is a study of the implementation, configuration and maintenance of Web server software. Students will install and configure a Web server. Topics include server layout and design considerations, cgi and back-end program management, data collection and management, backup and recovery procedures, security and secure transactions and logging and auditing. Typically offered Spring Fall Summer.

### **CIS 44200 - Internet/Web Security**

**Prerequisite(s):** CIS 14000 FOR LEVEL UG WITH MIN. GRADE OF D- AND CIS 24100 FOR LEVEL UG WITH MIN. GRADE OF D- AND CIS 18700 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is a study of existing methods and techniques for securing various components of computerized systems. Topics include types of attacks, monitoring and detection techniques, encryption methods, data security, authentication techniques and current trends in security. Typically offered Fall Spring Summer.

### **CIS 44500 - Network Security**

**Prerequisite(s):** CIS 31000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is a study of existing methods and techniques for developing and implementing a security policy and for securing various components of computerized systems. Topics include types of attacks, monitoring and detection techniques, encryption methods, data security, authentication techniques and current trends in security. Labs will emphasize various hardware and software security and data prevention packages. Typically offered Summer Fall Spring.

### **CIS 44600 - Web Development III**

Credit Hours: 3.00. This course is a study of advanced methods and techniques for developing and implementing Web and network-based applications. New topics and techniques in Web development are discussed. Extensive laboratory exercises and a comprehensive semester project are assigned. Typically offered Summer Fall Spring.

### **CIS 44700 - Disaster Recovery And Contingency Plans For Information Technology**

**Prerequisite(s):** CIS 44500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course provides methods to identify vulnerabilities and take appropriate countermeasures to prevent and mitigate information technology failure risks for an organization. Topics include: disaster recovery principles, development of policies and procedures, preparation of disaster recovery plan, testing and rehearsal of the plan, and actually recovering from a disaster. The classroom instruction provides a practical approach to develop disaster recovery and contingency plans. Typically offered Summer Fall Spring.

### **CIS 44900 - Information Technology Security Management**

**Prerequisite(s):** CIS 44700 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course covers techniques for architecture design, security infrastructure, and policy design. The course provides a practical approach through case scenarios of both the principles and practice of design, implementation, testing, and management of security technologies and security services. Typically offered Summer Fall Spring.

### **CIS 45100 - Computer Forensics**

**Prerequisite(s):** CIS 44900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course covers methods to properly conduct a computer forensics investigation. The course uses case scenarios to illustrate the principles and practice of investigation. Topics include: digital evidence and controls, processing incidents using computer forensics tools, investigation reports, and forensic analysis. Typically offered Summer Fall Spring.

### **CIS 45700 - Database Administration**

**Prerequisite(s):** CIS 14000 FOR LEVEL UG WITH MIN. GRADE OF D- AND CIS 25300 FOR LEVEL UG WITH MIN. GRADE OF D- AND CIS 28600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course covers database administration tasks and techniques. Students will install and implement two relational database management systems. Topics include RDBMS architecture, installation, creating databases, configuration, migrating data, database object management, user account management, tuning and backup and recovery. Typically offered Fall Spring Summer.

### **CIS 46000 - Programming Systems**

Credit Hours: 3.00. A broad overview of some basic and advanced concepts in higher level languages and their design. Emphasis is on issues and breadth rather than on details. Topics cover basic characteristics of programming languages, formal methods of defining syntax and semantics, broad language areas of string and list processing, formula manipulation, on-line commands, simulation, concepts of languages for specialized application areas and for program validation, and current research topics and technical issues. Typically offered Fall Spring.

### **CIS 46100 - Enterprise Solutions**

**Prerequisite(s):** CIS 34100 FOR LEVEL UG WITH MIN. GRADE OF D- OR CIS 35500 FOR LEVEL UG WITH MIN. GRADE OF D- OR CIS 36300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A course exploring enterprise-level solutions and trade-offs in achieving design goals. The solution patterns and best practices will be discussed. Topics include the design considerations in achieving application availability, scalability, and reliability; technical issues involved in transaction, testing, optimization, and deployment; the practical solutions for different architectures, component-based multi-tiered solutions, and distributed applications. Typically offered Summer Fall Spring.

### **CIS 46300 - Introduction To Mobile Programming**

**Prerequisite(s):** CIS 24100 FOR LEVEL UG WITH MIN. GRADE OF C- AND CIS 26300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course is an introduction to programming applications for mobile devices. Topics include a survey of various mobile development environments, with a concentration on the fundamentals of Android app development. Students are expected to be familiar with object-oriented programming concepts, preferably using Java or a similar programming language. Programming exercises are emphasized. Typically offered Fall Spring Summer.

### **CIS 46600 - Multithreaded Programming**

**Prerequisite(s):** CIS 36300 FOR LEVEL UG WITH MIN. GRADE OF D- AND CIS 30100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course covers multithreaded programming and distributed computing techniques. Topics include a review of object-oriented analysis and design, Universal Modeling Language (UML), Application Programming Interfaces (API), implementation of object-oriented design patterns, factorization, generalization, and object-oriented frameworks. Typically offered Fall Spring Summer.

### **CIS 46900 - Operating Systems Programming**

**Prerequisite(s):** CIS 31000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course will prepare students for being a network administrator. Specific topics of the course will include structure of scripting languages, scripting tools, and scripting uses. Scripts will be utilized to configure and update server and client operating systems types. The strengths and weaknesses of scripting techniques and tools will be discussed. Typically offered Summer Fall Spring.

### **CIS 48000 - Managing Information Systems Projects**

**Prerequisite(s):** CIS 18000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course introduces the advanced application of knowledge, skills, tools, and techniques that project managers use to plan, staff, estimate, and manage information technology projects. Students will apply project management technology and techniques to business problems. Typically offered Fall Spring.

### **CIS 48300 - Computer Hardware/Software Selection**

Credit Hours: 4.00. The course is designed to provide EDP technical personnel with information required to plan, design, and select computer systems. Included are the formulation of corporate requirements, configuration of hardware and software to satisfy stated requirements, comparison and evaluation of hardware and software, installation considerations, implementation procedures, performance measurement approaches and contract negotiations. Typically offered Fall.

### **CIS 49000 - Senior Project**

Credit Hours: 1.00 to 4.00. Independent study for seniors who desire to execute a complete computer oriented project. Typically offered Fall Spring Summer.

### **CIS 49500 - Internship In Computer Information Systems**

Credit Hours: 0.00 to 4.00. A special course in selected areas of computer information systems, designed to provide practical field experience under professional supervision in selected situations related to the student's area of specialization. Typically offered Fall Spring Summer.

### **CIS 49700 - Informational Systems and Computer Programming**

Credit Hours: 1.00 to 4.00. Hours, credit, and subject matter to be arranged by staff. Typically offered Fall Spring Summer.

### **CIS 49900 - Undergraduate Research In Computer Information Systems**

Credit Hours: 3.00. Students will work with a faculty member on a research project in their major. They will contribute to ongoing research while earning current research techniques in management. During this process the students will develop critical thinking and oral and written communication skills. If human subjects are to be involved, proper IRB clearance will be obtained in advance. Typically offered Fall Spring Summer.

## **Computer Science**

### **CS 10000 - An Introduction To Computer Science**

Credit Hours: 1.00. This course is intended to: integrate freshman computer science majors into the department; help them adjust to university life; assist them in developing their academic and intellectual capabilities; introduce them to contemporary issues in computer science; provide an overview of the careers open to those with degrees in computer science. this course must be taken pass/no pass only. Credit by examination is not available for this course. Typically offered Summer Fall Spring.

### **CS 12300 - Programming I: Java**

**Prerequisite(s):** MA 15900 FOR LEVEL UG WITH MIN. GRADE OF C- OR MA 16300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course is an introduction to computer science and computer programming with an emphasis on their scientific basis and applications. The primary language for this course is Java. The topics of the course includes: indentifiers, basic data types, operators, expressions, control statements, methods, recursion program structure, arrays, objects, classes, inheritance, polymorphism, and the design of simple graphical user interfaces. Typically offered Fall Spring Summer.

### **CS 12400 - Programming II: C++**

**Prerequisite(s):** CS 12300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course is an extension of CS 12300 that introduces the C++ programming language. The

topics of the course include: functions, program structure, pointers, objects, classes, and inheritance in C++, standard template library, files, streams, and the preprocessor. Typically offered Fall Spring Summer.

### **CS 14000 - Introduction To Data Processing (Visual Basic)**

Credit Hours: 3.00. Not available for credit toward graduation in the School of Science or for computer technology majors. Intended for students who expect to use computers outside the physical sciences and engineering. Introduction to the Visual Basic programming language and the development of event-driven programs.. Typically offered Fall Spring Summer.

### **CS 15800 - C Programming**

Credit Hours: 3.00. Introduction to structured programming in C. Data types and expression evaluation. Programmer-defined functions including passing parameters by value and by address. Selection topics include if/else/else-if, conditional expressions, and switch. Repetition topics include while, do-while, for, and recursion. External file input and output. Arrays, analysis of searching and sorting algorithms, and strings. Pointers and dynamic memory allocation. Students are expected to complete assignments in a collaborative environment. CS 15800 may be used to satisfy College of Science requirement of participation in at least one team-building and collaboration experience. Typically offered Summer Fall Spring.

### **CS 20600 - Computer Algebra And Programming**

**Prerequisite(s):** MA 16400 FOR LEVEL UG WITH MIN. GRADE OF C OR MA 16900 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Using a computer algebra system to solve mathematics problems, learning how to translate mathematical notation and procedures into the language of the computer algebra system. Learning the basic concepts of programming languages, comparing programming concepts with mathematical concepts. Typically offered Fall Spring Summer.

### **CS 22000 - Programming I For Engineers And Scientists**

Credit Hours: 3.00. Introduction to programming in C++. Course topics include data types, control flow, operators, and expressions. Applications for engineers and scientists.. Typically offered Spring.

### **CS 22300 - Computer Architecture And Assembly Language**

**Prerequisite(s):** CS 12400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An introduction to the fundamental concepts of computer architecture progressing from the digital logic level to the microarchitecture level and then to the instruction set level. Assembly language and the assembly process will also be included. Typically offered Fall Spring Summer.

### **CS 27500 - Data Structures**

**Prerequisite(s):** CS 12400 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) OR ECE 25100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Data structures describe the way that computer programs organize and store information. This course introduces the specification, representation and manipulation of the basic data structures common to much of computer programming such as: linked lists, arrays, stacks, queues, strings, trees, graphs, search trees, heaps, hash tables, and B-trees. Typically offered Fall Spring Summer.

### **CS 30100 - Language Competency**

**Prerequisite(s):** CS 12000

Credit Hours: 1.00. A course intended to give the student experience in an additional high-level language. Each section of this course is the responsibility of a particular faculty member who will advise the student and assign programming projects. A student may receive credit for at most three of these sections, but for no section whose language was a major component of a course for which credit has already been attained. Typically offered Fall Spring Summer.

### **CS 30200 - Operating Systems**

**Prerequisite(s):** CS 27500 FOR LEVEL UG WITH MIN. GRADE OF C- AND CS 22300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An operating system manages all of the hardware and software resources of a computer. This course provides an introduction to the basic concepts and terminology of operating systems. Topics will include multiprogramming, CPU scheduling, memory management, file systems, concurrent processes, multiprocessors, security, and network operating systems. Typically offered Fall Spring Summer.

### **CS 30303 - Internship In Computer Science**

Credit Hours: 1.00 to 3.00. Directed in-service experience with employers that may include but not limited to government agencies, private industry, and community organizations. Permission of department required. Typically offered Fall Spring Summer.

### **CS 30900 - Discrete Mathematical Structures**

**Prerequisite(s):** MA 16400 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. This course is the study of finite and discrete mathematical structures relating to the theory of computation. Topics will include directed and undirected graphs and their relation to these structures, combinatorial problems inherent in computation, Boolean algebra, and recurrence relations. Typically offered Fall Spring Summer.

### **CS 31600 - Programming Languages**

**Prerequisite(s):** CS 27500 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. The study of programming language features and their implementation in different types of programming languages. The design goals and motivations for various languages will be discussed. Topics will include a comparison of block-structured, object-oriented, functional, and logic programming languages. The advantages and disadvantages of each type of language will be considered. Specific examples of each type of language will be included. Typically offered Fall Spring Summer.

### **CS 33200 - Algorithms**

**Prerequisite(s):** CS 27500 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. An algorithm is a procedure for solving a problem in a finite number of steps. Algorithms, along with data structures, form the fundamental building blocks of computer programs. The types of algorithms discussed will include sorting, searching, probabilistic, graph, and geometric algorithms. The following algorithm techniques are covered: backtracking, divide and conquer, branch and bound, greedy method, and dynamic programming. Typically offered Fall Spring Summer.

### **CS 34200 - Introduction To Computer-Based Biomedical Image Analysis**

**Prerequisite(s):** MA 15400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 4.00. Introduction to image, manipulation and analysis. Biomedical materials to be analyzed include electrophoretic gels, bacterial agar plates, cells and tissues, x-ray films and CAT scan images. Personal computer systems and the basic programming skill of the C language also will be introduced. Typically offered Fall Spring Summer.

### **CS 40400 - Distributed Systems**

**Prerequisite(s):** CS 30200 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. A distributed system is two or more computers working together as a single unit. These systems are essential to the understanding of present and future computer applications. This course will include the following topics: concurrent processing, threads, network programming, distributed file systems, remote procedure calls, sockets, distributed objects, client-server models, and Internet protocols. Typically offered Fall Spring Summer.

### **CS 41000 - Automata And Computability**

**Prerequisite(s):** CS 27500 FOR LEVEL UG WITH MIN. GRADE OF D AND CS 30900 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. A finite automaton is a mathematical model for a computational system. Computer science embodies many examples of finite state systems. This course will cover the basic principles of deterministic and non-deterministic finite automata, Turing machines, formal language theory, regular expressions, context-free grammars, the halting problem, and unsolvability. Typically offered Fall Spring Summer.

### **CS 41600 - Software Engineering**

**Prerequisite(s):** CS 30200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Software engineering is the study of the theory, methods, and tools which are needed to develop large, complex software systems. This course covers the specifications, design, documentation, implementation, and testing of software systems. Software life cycles, principles of project management, and case studies are covered. A group project will be assigned. Typically offered Fall Spring Summer.

### **CS 42000 - Senior Design Project**

Credit Hours: 3.00. The objectives of this course is to provide students with concrete experience in writing advanced computer programs for practical application in science or industry. The student develops necessary software using appropriate techniques and prepares documentation for the use and support of the completed system. Typically offered Fall Spring Summer.

### **CS 44200 - Database Systems**

**Prerequisite(s):** CS 27500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A database is a system whose purpose is to organize, retrieve, and maintain large amounts of information. This course introduces the concepts and structures used in designing and implementing database systems.

Topics include hierarchical network, relational, and object-oriented data models, database design principles, normalization, data dictionaries, query languages and processing. Typically offered Fall Spring Summer.

### **CS 45500 - Interactive Computer Graphics**

**Prerequisite(s):** CS 27500 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 26500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Computer graphics provides a mechanism for creating and manipulating images by means of a computer. This course covers two-dimensional curve drawing, view transformations, geometric modeling, projects, ray tracing, surface patch, three-dimensional object rendering, shading, and animation. Windows programming using OpenGL and MFC will also be introduced. Typically offered Fall Spring Summer.

### **CS 46200 - Introduction To Artificial Intelligence**

**Prerequisite(s):** CS 27500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Basic problem-solving strategies, heuristic search, problem reduction and AND/OR graphs, knowledge representation, expert systems, generating explanations, uncertainty reasoning, game playing, planning, machine learning, computer vision, and programming systems such as LISP or PROLOG. Typically offered Fall Spring Summer.

### **CS 48000 - The Practicum In Computer Science**

Credit Hours: 3.00. The practicum course consists of a small team (faculty adviser and 1 to 4 students) working on a real problem obtained in conjunction with business or industry. Not more than two terms of MA 480 and/or C S 480 may be taken for credit. Typically offered Fall Spring Summer.

### **CS 49000 - Topics In Computer Sciences For Undergraduates**

Credit Hours: 1.00 to 5.00. Supervised reading and reports in various fields. Permission of instructor required. Typically offered Fall Spring Summer.

### **CS 50100 - Computing For Science And Engineering**

Credit Hours: 3.00. Credit in this course may not be used toward a graduate degree in Computer Sciences. Computational concepts, tools, and skills for computational science and engineering scripting for numerical computing, scripting for file processing, high performance computing, and software development. Project may be required. Typically offered Fall.

### **CS 51400 - Numerical Analysis**

**Prerequisite(s):** CS 41400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. (MA 51400) Iterative methods for solving nonlinear equations; linear difference equations, applications to solution of polynomial equations; differentiation and integration formulas; numerical solution of ordinary differential equations; roundoff error bounds. Typically offered Fall.

### **CS 51500 - Numerical Linear Algebra**

**Prerequisite(s):** CS 31400 FOR LEVEL UG WITH MIN. GRADE OF C- OR MA 26500 FOR LEVEL UG WITH MIN. GRADE OF C- OR MA 35100 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 51100 FOR LEVEL GR WITH MIN. GRADE OF C-

Credit Hours: 3.00. Direct and iterative solvers of dense and sparse linear systems of equations, numerical schemes for handling symmetric algebraic eigenvalue problems, and the singular-value decomposition and its applications in linear least squares problems. Typically offered Spring.

### **CS 59000 - Topics In Computer Sciences**

Credit Hours: 1.00 to 5.00. Directed study for students who wish to undertake individual reading and study on approved topics. Permission of instructor required. Typically offered Fall Spring.

## **Construction Engineering Management Technology**

### **CEMT 10300 - Introduction To Construction Management**

Credit Hours: 3.00. This course will provide students with an introduction to the construction management discipline, and prepare students for the program curriculum. Additionally, this course will serve as a Freshman Experience course, and will include utilization of campus resources, goal setting, values exploration, relationship of academic planning and life goals, discipline-specific career exploration, and critical thinking. Typically offered Fall Spring.

### **CEMT 11200 - Surveying Fundamentals**

**Prerequisite(s):** MA 14700 FOR LEVEL UG WITH MIN. GRADE OF C- OR MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C- OR APPL FOR MIN. SCORE OF 60

Credit Hours: 3.00. Introduction to basic surveying operations. Development of the surveying skills necessary to measure distances, angles, and elevations to required accuracies. Calculation of tape corrections, bearing, coordinates, traverses, and areas. Emphasis is placed on instrument use and note-keeping techniques. Typically offered Fall Spring.

### **CEMT 11700 - Construction Graphics**

Credit Hours: 3.00. Study of graphic solutions to problems conditioned by traditional and emerging construction document standards. Construction document creation is based on current architectural engineering and construction (AEC) standards with a focus on residential settings. Introductory 2D documentation will progress into 3D modeling techniques.

### **CEMT 16001 - Statics**

**Prerequisite(s):** MA 14700 FOR LEVEL UG WITH MIN. GRADE OF C- OR MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Study of forces acting on bodies at rest. Coplanar and non-coplanar forces, concurrent and non-concurrent forces, hydrostatic forces, centroids and moments of inertia will be studied. Typically offered Fall Spring.

### **CEMT 17000 - Materials And Systems Of Construction**

Credit Hours: 3.00. An introduction to the nature of the construction industry and a survey of the most commonly used construction materials with special emphasis on their properties characteristics, limitations and applications into different construction elements and systems such as foundations columns, trusses, arches, frames, etc. Guest speakers will discuss the nature and opportunities within the construction industry. Typically offered Fall Spring.

### **CEMT 20900 - Land Surveying and Subdivision**

**Prerequisite(s):** (CEMT 11700 FOR LEVEL UG WITH MIN. GRADE OF C- OR ARET 11700 FOR LEVEL UG WITH MIN. GRADE OF C- OR ART 15000 FOR LEVEL UG WITH MIN. GRADE OF C-) AND (CEMT 11200 FOR LEVEL UG WITH MIN. GRADE OF C- OR CET 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR BCM 11200 FOR LEVEL UG WITH MIN. GRADE OF C-) AND (CEMT 25300 FOR LEVEL UG WITH MIN. GRADE OF C- OR CET 25300 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 3.00 or 4.00. Theory and practice of land surveying, subdivision, filing and recording deeds, United States government survey of public lands, laws of land surveying, descriptions and area computations for land surveys. Subdivision planning, calculations and plotting, water main layouts, storm and sanitary sewer calculations and layouts. Street plans and profiles. Typically offered Fall Spring.

### **CEMT 22200 - Architectural Construction**

**Prerequisite(s):** CEMT 11700 FOR LEVEL UG WITH MIN. GRADE OF C- OR ARET 11700 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Preparation of preliminary and working drawings for an intermediate-sized commercial or institutional building. Typically offered Spring.

### **CEMT 23000 - Mechanical And Electrical Systems**

**Prerequisite(s):** CEMT 11700 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A survey of systems for the supply and drainage of water, the heating and cooling of buildings, and the electrical power and lighting for buildings. Typically offered Fall Spring Summer.

### **CEMT 25300 - Hydraulics And Drainage**

**Prerequisite(s):** CEMT 16001 FOR LEVEL UG WITH MIN. GRADE OF C- OR CET 16000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Basic hydrostatics, Bernoulli's equation, flow in water and sewer lines, overland and ditch drainage, and culvert size determination. Typically offered Fall.

### **CEMT 26001 - Strength Of Materials**

**Prerequisite(s):** CEMT 16001 FOR LEVEL UG WITH MIN. GRADE OF C- OR CET 16000 FOR LEVEL UG WITH MIN. GRADE OF C- OR MET 11800 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Study of stress-strain relationships, shear and bending moment diagrams, stresses and deflections of beams, axial loads, and combined stresses. Applied problems in the field structural design. Typically offered Fall Spring.

### **CEMT 26600 - Materials Testing**

**Prerequisite(s):** CEMT 26001 FOR LEVEL UG WITH MIN. GRADE OF C- OR CET 26000 FOR LEVEL UG WITH MIN. GRADE OF C- OR MET 21100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Testing of construction materials to determine physical and mechanical properties. Preparation of reports from data secured from such tests. Typically offered Fall Spring.

### **CEMT 27600 - Construction Specifications And Contracts**

**Prerequisite(s):** CEMT 11700 FOR LEVEL UG WITH MIN. GRADE OF C- OR ARET 25000 FOR LEVEL UG WITH MIN. GRADE OF C- OR ART 15000 FOR LEVEL UG WITH MIN. GRADE OF C- OR CET 20800 FOR



LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Analyze the content and organization of specifications and how they relate to working drawings during construction. A study of the various types of contract documents used for construction. Typically offered Spring.

### **CEMT 28100 - Structural Calculations**

**Prerequisite(s):** CEMT 26001 FOR LEVEL UG WITH MIN. GRADE OF C- OR CET 26000 FOR LEVEL UG WITH MIN. GRADE OF C- OR MET 21100 FOR LEVEL UG WITH MIN. GRADE OF C- OR CET 26000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Practice in the calculation of loads, reactions, shear, and moment for determinate structures. Analysis and design of steel structural members subjected to tension, compression, bending and combined stresses. Typically offered Fall Spring.

### **CEMT 29901 - Construction Engineering And Management Technology**

Credit Hours: 1.00 to 3.00. Independent project or laboratory work is conducted under the supervision of appropriate CEMT faculty. Hours and subject matter must be arranged by instructor and approved by CEMT curriculum subcommittee. Permission of instructor required. Typically offered Fall Spring Summer.

### **CEMT 30600 - Construction And Route Surveying**

**Prerequisite(s):** CEMT 11200 FOR LEVEL UG WITH MIN. GRADE OF C- OR CET 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR BCM 11200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Application of surveying skills relevant to the construction field. Projects include; layout of commercial and industrial buildings, transfer of horizontal and vertical control, establishment of route centerlines, establishment of lines and grades, determination of earthwork quantities, establishing slope stakes, triangulation, topographic mapping, etc. Instruments used will include transits, theodolites, automatic levels, construction lasers, and EDMs. Typically offered Fall Spring.

### **CEMT 30900 - Principles of Highway Construction**

Credit Hours: 3.00. Basic principles of highway construction, including materials, methods, interpreting of plans and specifications, earthmoving, drainage, paving, bridges, and retaining walls. Typically offered Fall Spring.

### **CEMT 31000 - Surveying Computations**

**Prerequisite(s):** BCM 11200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Analysis of errors in surveying measurements. Adjustments to surveying measurements, including an introduction to the least squares adjustment method. Computations using rectangular coordinates including intersections and coordinate transformations. Computations associated with horizontal and vertical control networks. Typically offered Fall Spring Summer.

### **CEMT 32500 - Structural Applications**

**Prerequisite(s):** CEMT 28100 FOR LEVEL UG WITH MIN. GRADE OF C- OR CET 28000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Techniques in analyzing statically determinant and indeterminate structures with a discussion of moment distribution. Standard design procedures for wood, steel, and concrete structures. Sizing of beams, columns and connections. Typically offered Fall.

### **CEMT 33100 - Properties And Behavior Of Soils**

**Prerequisite(s):** CEMT 26600 FOR LEVEL UG WITH MIN. GRADE OF C- OR CET 26600 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Identification and properties of soils with emphasis on laboratory and field testing. Behavior of soils relating to design and construction of structures and highways. Typically offered Fall.

### **CEMT 34000 - Fundamentals Of Construction Safety**

Credit Hours: 3.00. (OLS 34000) Overview of construction safety and health regulations. Throughout the course students will participate in discussions pertaining to construction safety issues and will be provided information to evaluate the primary OSHA targeted hazards in the construction industry, OSHA 30 Hr. card. Students will learn to recognize key hazards, be exposed to control technologies and corrective actions for the prevention of an injury, illness, and fatality that commonly occurs at construction sites. (Not open to students with credit in OLS 34000). Typically offered Fall Spring Summer.

### **CEMT 34101 - Construction Operations**

Credit Hours: 3.00. Management, methods and equipment used in the construction of buildings, earthworks, bridges and roads. Contractor organization, job management, and safety. Excavation, formwork, concrete, masonry, and steel erection methods. Typically offered Fall Spring Summer.

### **CEMT 34201 - Construction Costs And Bidding**

**Prerequisite(s):** CEMT 34101 FOR LEVEL UG WITH MIN. GRADE OF C- OR CMET 34100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A study of methods to estimate quantities of materials required in construction. Practice in making quantity surveys. Estimating total job costs (material and labor, quality survey, overhead, subcontracts) and bidding practices of the construction industry. Topics in construction law and ethics. Typically offered Spring.

### **CEMT 34400 - Construction Inspection**

**Prerequisite(s):** BCM 23500 FOR LEVEL UG WITH MIN. GRADE OF C- OR ARET 27600 FOR LEVEL UG WITH MIN. GRADE OF C- OR CEMT 27600 FOR LEVEL UG WITH MIN. GRADE OF C- OR CMET 34100 FOR LEVEL UG WITH MIN. GRADE OF C- OR CEMT 34101 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Inspection procedures as applied to contracted construction and the execution of the completed contract. Typically offered Fall Spring Summer.

### **CEMT 38000 - Concrete Construction**

**Prerequisite(s):** CEMT 26001 FOR LEVEL UG WITH MIN. GRADE OF C- OR CET 26000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An overview of concrete construction, including material composition, behavior and handling of concrete, formwork, and concrete reinforcement. Typically offered Fall Spring Summer.

### **CEMT 44500 - Construction Management I**

**Prerequisite(s):** (CEMT 34201 FOR LEVEL UG WITH MIN. GRADE OF C- OR CMET 44200 FOR LEVEL UG WITH MIN. GRADE OF C- OR BCM 37500 FOR LEVEL UG WITH MIN. GRADE OF C-) AND (CEMT 34400 FOR LEVEL UG WITH MIN. GRADE OF C- OR CMET 34000 FOR LEVEL UG WITH MIN. GRADE OF C-) AND (CEMT 45000 FOR LEVEL UG WITH MIN. GRADE OF C- OR CMET 45000 FOR LEVEL UG WITH MIN. GRADE OF C- OR BCM 21200 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 3.00. Business policy and problems relating to construction companies. Includes contractors' organization, financial management, project management, supervision, cost analysis, and equipment economics and topics in construction law and ethics. Typically offered Spring.

### **CEMT 45000 - Construction Scheduling**

**Prerequisite(s):** CEMT 34101 FOR LEVEL UG WITH MIN. GRADE OF C- OR CMET 34100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A study of the planning and control of construction projects. Time schedules for materials, labor and equipment, expediting material delivery, bar charts, Critical Path Method (CPM) scheduling. Precedence diagrams and Program Evaluation Review Techniques (PERT). The course emphasizes the use of computers for scheduling and updating of the construction process. Typically offered Fall.

### **CEMT 48900 - Senior Project Survey**

Credit Hours: 1.00. Students will develop a topic for the following design project, CMET 49000. Students will establish project scope, general and specific objectives, literature review and background, and establish time schedules for completion of the project. Students are encouraged to develop alternate proposals. Students will analyze a previously completed senior project. Typically offered Fall Spring.

### **CEMT 49000 - Senior Project**

**Prerequisite(s):** CEMT 48900 FOR LEVEL UG WITH MIN. GRADE OF C- OR CMET 48900 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Development of a project combining the skill and knowledge gained from previous courses. Project is presented before a departmental panel and will include graphical material, oral, and written communication. Typically offered Fall Spring Summer.

### **CEMT 49400 - Engineering Economics for Construction**

Credit Hours: 3.00. Introduction to engineering economy and its methods related to time value of money. Economical evaluation and comparison of alternatives considering costs, returns, interest, taxes, and probability in a time span; determining feasibility, break-even points, and rate of return. Cost indices for construction. Typically offered Spring.

### **CEMT 49901 - Construction Engineering And Management Technology**

Credit Hours: 1.00 to 3.00. Independent project or laboratory work is conducted under the supervision of appropriate CEMT faculty. Hours and subject matter must be arranged by instructor and approved by CEMT curriculum subcommittee. Permission of instructor required. Typically offered Fall Spring Summer.

## **Construction Management and Engineering Technology**

**CMET 10000 - Freshman Experience For CMET**

Credit Hours: 1.00. This course will include utilization of campus resources, goal setting, values exploration, relationship of academic planning and life goals, discipline-specific career exploration and critical thinking. Typically offered Fall Spring.

**CMET 10100 - Construction Lectures**

Credit Hours: 1.00. Construction Lectures. Typically offered Fall Spring Summer.

**CMET 10200 - Technical Computations**

Credit Hours: 2.00. A study of elements from algebra and trigonometry appropriate to surveying, estimating, statics, and other construction-related courses. Graphs and reports are included. Additionally, word processing, spreadsheets, and PowerPoint presentations will be included. The correct use of calculators will be addressed. Typically offered Fall Spring.

**CMET 10300 - Introduction To Construction Management**

Credit Hours: 3.00. This course will provide students with an introduction to the construction management discipline, and prepare students for the program curriculum. Additionally, this course will serve as a Freshman Experience course, and will include utilization of campus resources, goal setting, values exploration, relationship of academic planning and life goals, discipline-specific career exploration, and critical thinking. Typically offered Fall Spring.

**CMET 19000 - Construction Experience I**

Credit Hours: 1.00. Minimum of 10 weeks work experience in the construction industry, plus written report of directed academic project. Typically offered Fall Spring Summer.

**CMET 28000 - Quantity Survey And Estimating**

**Prerequisite(s):** ARET 25000 FOR LEVEL UG WITH MIN. GRADE OF C OR CET 20800 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A study of methods to estimate quantities of materials required in construction. Practice in making quantity surveys. Introduction to estimating labor and cost. Typically offered Fall.

**CMET 29100 - Construction Experience II**

Credit Hours: 1.00. Minimum of ten weeks work experience in the construction industry, plus written report of directed academic project. Typically offered Fall Spring Summer.

**CMET 32500 - Structural Applications**

**Prerequisite(s):** CET 28000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Techniques in analyzing statically determinant and indeterminate structures with a discussion of moment distribution. Standard design procedures for wood, steel, and concrete structures. Sizing of beams, columns and connections. Typically offered Fall.

**CMET 33500 - Shoring, Formwork And Scaffolding Design And Safety**

**Prerequisite(s):** CET 28000 FOR LEVEL UG WITH MIN. GRADE OF C AND CET 33100 FOR LEVEL UG WITH MIN. GRADE OF C AND CMET 34100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Fundamentals in the design of shoring; concrete forms for beams, columns, slabs and walls; the design and selection of scaffolding systems. A discussion of erection and fabrication techniques with an emphasis upon safety. Typically offered Spring.

**CMET 34100 - Construction Operations**

Credit Hours: 3.00. Management, methods and equipment used in the construction of buildings, earthworks, bridges and roads. Contractor organization, job management, and safety. Excavation, formwork, concrete, masonry, and steel erection methods. Typically offered Fall.

**CMET 34400 - Construction Inspection**

**Prerequisite(s):** ARET 27600 FOR LEVEL UG WITH MIN. GRADE OF C AND CMET 34100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Inspection procedures as applied to contracted construction, and the role inspection plays in the execution of the completed contract. The laboratory period is used for demonstration, guest lecturer presentations, and for field trips to construct sites, fabrication shops, and testing laboratories. Typically offered Spring.

**CMET 39000 - Construction Experience III**

Credit Hours: 1.00. Minimum of 10 weeks work experience in the construction industry, plus written report of directed academic project.. Typically offered Fall Spring Summer.

**CMET 42000 - Construction Law**

**Prerequisite(s):** CMET 34400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course introduces general construction laws and regulations and legal procedures relevant to

construction projects. The course covers wide-ranging legal aspects during a construction project from planning, design, engineering, and construction phases through the post-construction phase. Topics in this course include typical legal aspects in the construction industry; contractual liabilities from owners, design professionals, and contractors' perspectives; common issues for disputes and claims; suggestions to resolve legal arguments; and ethics in the construction industry. Typically offered Fall.

### **CMET 44200 - Construction Costs And Bidding**

**Prerequisite(s):** CMET 34100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A study of methods to estimate quantities of materials required in construction. Practice in making quantity surveys. Estimating total job costs (material and labor, quality survey, overhead, subcontracts) and bidding practices of the construction industry. Topics in construction law and ethics. Typically offered Spring.

### **CMET 44500 - Construction Management I**

**Prerequisite(s):** CMET 34400 FOR LEVEL UG WITH MIN. GRADE OF C AND CMET 44200 FOR LEVEL UG WITH MIN. GRADE OF C AND CMET 45000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Business policy and problems relating to construction companies. Includes contractors' organization, financial management, project management, supervision, cost analysis, and equipment economics and topics in construction law and ethics. Typically offered Spring.

### **CMET 45000 - Construction Scheduling**

**Prerequisite(s):** CMET 34100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A study of the planning and control of construction projects. Time schedules for materials, labor and equipment, expediting material delivery, bar charts, Critical Path Method (CPM) scheduling. Precedence diagrams and Program Evaluation Review Techniques (PERT). The course emphasizes the use of computers for scheduling and updating of the construction process. Typically offered Fall.

### **CMET 48700 - Design And Development For Facility Management**

Credit Hours: 3.00. A study of the functional relationships required to design modern commercial, office, hospital, industrial and institutional facilities. Development and leasing of commercial buildings. Design of office interiors including an introduction to furniture and communications systems. A basic introduction to drafting and blueprint reading. Typically offered Fall Spring.

### **CMET 48900 - Senior Project Survey**

Credit Hours: 1.00. Students will develop a topic for the following design project, CMET 49000. Students will establish project scope, general and specific objectives, literature review and background, and establish time schedules for completion of the project. Students are encouraged to develop alternate proposals. Students will analyze a previously completed senior project. Typically offered Fall Spring.

### **CMET 49000 - Senior Project**

**Prerequisite(s):** CMET 48900 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. The development of a project which will combine the skill and knowledge gained from various areas of study. The student will be expected to present a project which has been approved by his faculty advisor to a panel of departmental faculty chosen by the advisor. This presentation should include graphical material as well as oral and written communication. Typically offered Fall Spring.

### **CMET 49300 - Facility Operations, Scheduling And Management**

**Prerequisite(s):** MGMT 20000 FOR LEVEL UG WITH MIN. GRADE OF C AND ARET 28300 FOR LEVEL UG WITH MIN. GRADE OF C AND CMET 49200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An introduction to the management, methods and equipment used in the remodeling or construction of commercial, office and institutional buildings. A study of the planning and control of construction projects including time schedules for materials, labor, equipment and maintenance; expediting material delivery; bar charts; Critical Path Method (CPM); and Program Evaluation Review Techniques (PERT) for scheduling. Business policy problems as they relate to facilities as well as financial management, project management, supervision, cost analysis and equipment costs will be discussed. Typically offered Fall Spring.

### **CMET 49500 - Introduction To Facility Management**

Credit Hours: 3.00. An introduction to topics directly related to the management of large facilities with an emphasis on architectural and engineering systems, maintenance, cost management, life safety, and grounds and landscaping maintenance. Typically offered Fall Spring.

### **CMET 49700 - Construction Topics**

Credit Hours: 0.00 to 4.00. Topics vary. Typically offered Fall Spring Summer.

### **CMET 49900 - Special Assignments**

Credit Hours: 1.00 to 4.00. Hours, subject matter and credit to be arranged by staff. Typically offered Fall Spring Summer.

### **CMET 50100 - Temporary Structures In Construction**

Credit Hours: 3.00. This course is designed for students who want to learn analytical methods and techniques applicable in construction operations. It covers fundamental simulation algorithms and computer-aided quantitative analysis methods to be used for construction operations. Topics to be included are: data analysis, operational analysis tools, and simulation techniques that require comprehensive group projects involving modeling and analyzing actual construction operations. Prerequisite: Graduate status or senior status with consent of instructor. Typically offered Fall Spring Summer.

### **CMET 50800 - Highway Construction And Maintenance**

Credit Hours: 3.00. This course is designed for students who are seeking to begin their careers in highway engineering and construction industry. Focused on the core issues of highway construction and maintenance, the course covers the entire highway construction project life cycle from the planning stage to key maintenance issues of the highway system. Detailed topics to be covered include primary elements of highway planning, principles of highway and pavement design, typical road plans and specifications, pavement parameters, and the key issues of highway construction and maintenance. This course also requires a term project where students can experience a real highway construction project. Typically offered Fall Spring.

### **CMET 52000 - Green Construction**

Credit Hours: 3.00. A survey of the LEED Green Building Rating System. An overview of the system will be discussed and each environmental category will be covered. An in-depth analysis of each possible credit in each category will be discussed. Students will develop strategies for each credit's attainment; listing the advantages and disadvantages of each strategy. Necessary documentation for credit attainment will also be covered. Graduate students with insufficient background may be required to take some leveling courses. Permission of instructor is required. Typically offered Fall Spring Summer.

### **CMET 54100 - Advanced Construction Operations**

Credit Hours: 3.00. This course is designed for students who would like to learn analytical methods and techniques to be applicable in construction operations. It covers fundamental simulation algorithms and computer-aided quantitative analysis methods to be used for construction operations. Topics to be included are: data analysis, operational analysis tools, and simulation techniques, which require comprehensive group projects that involve modeling and analyzing actual construction operations. Prerequisite: Graduate status or senior status with consent of instructor. Permission of department required. Typically offered Fall Spring Summer.

### **CMET 58100 - Workshop In Construction Management And Engineering Technologies**

Credit Hours: 0.00 to 8.00. This course is an advanced study of technical and professional topics. Emphasis is on new development relating to technical, operational, and training aspects of industry and technology education. Permission of instructor required. Typically offered Fall Spring Summer.

### **CMET 59000 - Special Problems In Construction Management And Engineering Technologies**

Credit Hours: 1.00 to 6.00. Intensive individual study of selected current developments and issues in Construction Management & Engineering Technology. Does not substitute for either M.S. thesis or M.S. project credit. A faculty sponsor is required for this course. Permission of instructor required. Typically offered Fall Spring Summer.

## **Construction Technology**

### **CNT 32500 - Structural Applications**

**Prerequisite(s):** CET 28000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Techniques in analyzing statically determinant and indeterminate structures with a discussion of moment distribution. Standard design procedures for wood, steel, and concrete structures. Sizing of beams, columns and connections. Typically offered Fall.

## **Criminal Justice**

### **CRJU 15000 - Introduction To The Criminal Justice System**

Credit Hours: 3.00. A study of the agencies and processes involved in the criminal justice system; legislatures, the courts, the police, the prosecutor, the public defender and corrections. An analysis of the roles and problems of each component with an emphasis on their interrelationships. Typically offered Fall Spring Summer.

### **CRJU 23000 - Introduction To Law Enforcement**

**Prerequisite(s):** CRJU 15000 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. A study of the major issues and controversies facing police officers. Recruitment, training, new philosophies, strategies, police management, misconduct, accountability, and the future of policing will be discussed.

The development of modern policing in America in the past, the present, and future will be discussed. Typically offered Fall Spring Summer.

### **CRJU 24000 - Introduction To Corrections**

**Prerequisite(s):** CRJU 15000 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. An overview of how and why punishment is administered and an examination of the functions that our jails and prisons provide. Alternatives to incarceration will be reviewed. Typically offered Fall Spring Summer.

### **CRJU 25000 - Introduction To Probation And Parole**

**Prerequisite(s):** CRJU 15000 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Examines the organization and operations of the US probations and parole agencies as particular segments of the criminal justice system. Examines probation as a part of the judicial system and parole as part of the prison/correctional system. Typically offered Fall Spring Summer.

### **CRJU 30700 - Victimology**

**Prerequisite(s):** CRJU 15000 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Study and analysis of institutional and other problems and issues relating to victims including the relationship between the victim and the offender, the victim and the criminal justice system, and the victim and various governmental and/or social institutions. The course will also explore how race, class, and gender have impacted victims and often been part of victimization. Typically offered Fall Spring Summer.

### **CRJU 31500 - Incarceration And Society**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. This class focuses on the history of incarceration as a response to crime in the United States. It will look at types of responses to crime (e.g., laws, regulation, length of incarceration, community service vs. jail time, etc.), changes over time and the impact that both have on society. The issue of recidivism will also be explored. Typically offered Fall.

### **CRJU 32000 - Murder In America**

**Prerequisite(s):** CRJU 15000 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Analyzes the nature and extent of homicide in the United States. Theoretical perspectives will provide explanations as to the prevalence of murder in our society. Victim and offender characteristics will be examined along with legal responses to homicide. Typically offered Fall Spring Summer.

### **CRJU 32400 - Criminology**

Credit Hours: 3.00. (SOC 32400 ) Nature and cause of crime; methods of dealing with adult and juvenile offenders; consideration of present programs for the social treatment of crime in the light of needed changes. Typically offered Fall Spring.

### **CRJU 34100 - Criminal Investigation**

**Prerequisite(s):** CRJU 15000 FOR LEVEL UG WITH MIN. GRADE OF D AND POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. This course is designed to develop an analytical understanding of the investigative process. It will merge theoretical and philosophical approaches to crime detection and solution. This course examines judicial efforts to define individual rights and to control enforcement conduct in the investigation and prevention of crime. Typically offered Fall Spring Summer.

### **CRJU 39000 - Research In Criminal Justice**

**Prerequisite(s):** CRJU 15000 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. A variable-titled research course organized around semester-long topics selected by the instructor to reflect his/her area of knowledge and interest. Typically offered Fall Spring Summer.

### **CRJU 44000 - Criminal Law**

**Prerequisite(s):** CRJU 15000 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Study of the two branches of criminal law: procedural and substantive law. The course focuses on the application of substantive criminal law in relation to crimes against people, persons, habitation, property, and public order. Elements of criminal liability, defenses to criminal liability, the doctrine of complicity, and inchoate crimes are also examined in the course. Typically offered Fall Spring Summer.

### **CRJU 44300 - Field Experience In Criminal Justice**

**Prerequisite(s):** CRJU 15000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Observation and supervised participation in the criminal justice system. Readings and class meetings to integrate theory and experience. Intended for students who plan to become employed in the criminal justice system upon receiving the bachelor's degree. Typically offered Fall Spring Summer.

## **Earth and Atmospheric Sciences**

### **EAS 10000 - Planet Earth**

Credit Hours: 3.00. An introduction to the Geosciences-Earth science, oceanography, atmospheric science and astronomy. The course emphasizes topics (earthquakes, volcanoes, ocean pollution, climate change, severe weather, etc.) that are of general interest and relevance, and the interconnections between various Earth processes. Typically offered Fall Spring.CTL:IPS 1730 Earth Science

### **EAS 10400 - Oceanography**

Credit Hours: 3.00. Origin of the oceans and marine life. Seafloor spreading and marine geology; currents, waves, and tides; marine organisms and ecology; beaches and nearshore life. Man's use and abuse of the sea, including contemporary problems and future opportunities. The role of oceans in climate and evolution of the biosphere. Recommended for both science and nonscience majors. Typically offered Fall Spring.

### **EAS 10500 - The Planets**

Credit Hours: 3.00. This course deals with current knowledge of the physical, chemical, and geological nature of the planets and their atmospheres derived in part from data provided by manned and unmanned space probes and other techniques. Similarities and differences between the earth and other planets are described and discussed within the role of planetary formation. Typically offered Fall Spring.

### **EAS 11000 - Survey Of Geology**

Credit Hours: 3.00. A survey of concepts, methods, and materials of physical and historical geology of professional and cultural interest to students who do not need the rigorous treatment of EAS 11100 or 11200. Laboratory will illustrate the methods and materials used in geologic studies. Not available for credit to students with credit in EAS 11100. Typically offered Fall Spring.

### **EAS 11300 - Introduction To Environmental Science**

Credit Hours: 3.00. (NRES 29000, AGRY 29000) An introduction to environmental science, including issues such as climate change, energy resources, air and water pollution, toxic waste disposal, soil erosion, natural hazards, and environmental planning. Includes extensive in-class discussion of case studies. Typically offered Fall.

### **EAS 12000 - Introduction To Geography**

Credit Hours: 3.00. An introduction to the systematic study of location and spatial variation of natural features. Elements of place, time, distance, and area are considered in relation to man's perception of environment, his organization of cultural activities, and his utilization of natural resources. A one-day field trip is required. Typically offered Fall Spring.

### **EAS 13000 - Introductory Earth Science for Elementary Education**

**Prerequisite(s):** MA 11100 FOR LEVEL UG WITH MIN. GRADE OF C OR MA 11500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Origins of the earth and solar system, evolution and history of earth forms, geological processes, and the history of life with its interdependence with the earth are discussed in a context appropriate for teaching in an elementary school setting. Typically offered Fall Spring.

### **EAS 19100 - Introductory Topics In Earth And Atmospheric Science**

Credit Hours: 1.00 to 3.00. Introductory special topics in earth and atmospheric sciences. Permission of instructor required. Typically offered Fall Spring Summer.

### **EAS 22000 - Survey Of Physical Geography**

Credit Hours: 3.00. A study of landforms, climates, soils and resources that comprise the world's natural environments. Typically offered Fall Spring Summer.

### **EAS 22200 - Weather Studies**

Credit Hours: 3.00. Online Weather Studies covers the composition and structure of the atmosphere, the flow of energy to, from, and through the atmosphere, and the resulting motions. The basic physical principles of atmospheric conditions are stressed through the study of weather from meteorological data delivered via the Internet. Particular attention is given to severe weather topics and the effects of weather and climate on global societies. Typically offered Summer Fall Spring.

### **EAS 22300 - Ocean Studies**

Credit Hours: 3.00. Online Ocean Studies examines the ocean as it interacts with other components of the Earth. Basic physical and chemical properties of the ocean are stressed through oceanographic data delivered via the Internet. Topics include the flow and transformations of water and energy into and out of the ocean, ocean circulation, marine life and its adaptations, climate change, and the human/societal impacts pertaining to the ocean. Typically offered Summer Fall Spring.

### **EAS 39100 - Topics In Earth And Atmospheric Sciences**

Credit Hours: 1.00 to 4.00. Intermediate special topics in the earth and atmospheric sciences. Permission of instructor required. Typically offered Fall Spring Summer.

## **Electrical and Computer Engineering**

### **ECE 15200 - Programming For Engineers**

**Prerequisite(s):** ENGR 15100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Introductory C programming course. Students will be introduced to basic syntax, standard mathematics library, control structures, user-defined functions, arrays, pointers, structures, and file I/Os. Laboratory exercises will accelerate learning of fundamental materials through supervised practice. Typically offered Fall Spring Summer.

### **ECE 20100 - Linear Circuit Analysis I**

**Prerequisite(s):** MA 16400 FOR LEVEL UG WITH MIN. GRADE OF C AND PHYS 15200 FOR LEVEL UG WITH MIN. GRADE OF C AND ECE 20700 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. Volt-ampere characteristics for circuit elements; independent and dependent sources; Kirchhoff's laws and circuit equations. Source transformations; Thevenin's and Norton's theorems; superposition, step response of 1st order (RC, RL) and 2nd order (RLC) circuits. Phasor analysis, impedance calculations, and computation of sinusoidal steady state responses. Instantaneous and average power, complex power, power factor correction, and maximum power transfer. Instantaneous and average power. Typically offered Fall Spring Summer.

### **ECE 20200 - Linear Circuit Analysis II**

**Prerequisite(s):** ECE 20100 FOR LEVEL UG WITH MIN. GRADE OF C AND ECE 20700 FOR LEVEL UG WITH MIN. GRADE OF C AND MA 26100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Continuation of ECE 20100. Use of Laplace Transform techniques to analyze linear circuits with and without initial conditions. Characterization of circuits based upon impedance, admittance, and transfer function parameters. Determination of frequency response via analysis of poles and zeros in the complex plane. Relationship between the transfer function and the impulse response of a circuit. Use of continuous time convolution to determine time domain responses. Properties and practical uses of resonant circuits and transformers. Input - output characterization of a circuit as a two-port. Low and high-pass filter design. Typically offered Fall Spring Summer.

### **ECE 20700 - Electronic Measurement Techniques**

Credit Hours: 1.00. Experimental exercises in the use of laboratory instruments. Voltage, current, impedance, frequency, and wave form measurements. Frequency and transient response. Elements of circuit modeling and design. Typically offered Fall Spring Summer.

### **ECE 20800 - Electronic Devices And Design Laboratory**

**Prerequisite(s):** ECE 20700 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECE 25500 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 1.00. Laboratory experiments in the measurement of electronic device characteristics. Design of biasing networks, small signal amplifiers, and switching circuits. Typically offered Fall Spring.

### **ECE 21800 - Linear Circuits Laboratory II**

**Prerequisite(s):** ECE 20700 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECE 20200 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 1.00. A continuation of EE/ECE 20700, with the introduction of advanced measurement methods and more sophisticated instrumentation. Typically offered Fall Spring Summer.

### **ECE 23300 - Microcomputers In Engineering**

**Prerequisite(s):** ENGR 15100 FOR LEVEL UG WITH MIN. GRADE OF C AND ECE 20100 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND ECE 20700 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. An introduction to microcomputers and microcontrollers with emphasis on single board embedded systems: gates, memory, microcomputer hardware, data representation, programming, input/output, interfacing, analog to digital conversion, digital to analog conversion, transducers, sensors, actuators, and the design and development of turnkey systems. Typically offered Fall Spring Summer.

### **ECE 25100 - Object Oriented Programming**

**Prerequisite(s):** ENGR 15200 FOR LEVEL UG WITH MIN. GRADE OF C- OR ECE 15200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. The C++ and Java programming languages are presented. Students will be introduced to classes,



inheritance, polymorphism, class derivation, abstract classes, interfaces, function overloading and overriding, container classes and template classes. Typically offered Fall Spring.

### **ECE 25500 - Introduction To Electronic Analysis And Design**

**Prerequisite(s):** ECE 20100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Diode, bipolar transistor, and FET circuit models for the design and analysis of electronic circuits. Single and multistage analysis and design; introduction to digital circuits. Computer-aided design calculations, amplifier operating point design, and frequency response of single and multistage amplifiers. High-frequency and low-frequency designs are emphasized. Typically offered Fall Spring.

### **ECE 26400 - Advanced C Programming**

**Prerequisite(s):** ENGR 18100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGR 19500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Continuation of a first programming course. Topics include files, structures, pointers, and the proper use of dynamic data structures. A basic knowledge of the UNIX operating system and an introductory C programming course; C programming knowledge should include basic syntax, control structures, and file I/O, as well as experience in declaring and using functions. Typically offered Fall Spring Summer.

### **ECE 27000 - Introduction To Digital System Design**

**Prerequisite(s):** ECE 20100 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECE 20700 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. An introduction to digital system design and hardware engineering, with an emphasis on practical design techniques and circuit implementation. Typically offered Fall Spring.

### **ECE 27001 - Introduction to Digital System Design**

**Prerequisite(s):** ECE 15200 FOR LEVEL UG WITH MIN. GRADE OF C AND ECE 20100 FOR LEVEL UG WITH MIN. GRADE OF C AND ECE 20700 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 4.00. An introduction to the analysis and design of combinational and sequential digital systems, with an emphasis on practical design techniques and rapid prototyping on a contemporary programmable logic device using a modern hardware description language (HDL) and electronic design automation (EDA) software. Typically offered Spring.

### **ECE 27500 - Analog and Digital Electronics**

**Prerequisite(s):** ECE 20100 FOR LEVEL UG WITH MIN. GRADE OF C AND ECE 20700 FOR LEVEL UG WITH MIN. GRADE OF C AND ECE 20200 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 4.00. Electronic amplifiers; operational amplifier circuits; diode characteristics and circuit applications; bipolar junction transistor (BJT) and MOSFET characteristics, operating modes biasing, linear amplifier configurations; ideal characteristics of logic devices; basic logic devices using BJTs and MOSFETs. Typically offered Fall Spring Summer.

### **ECE 29100 - Industrial Practice I**

Credit Hours: 0.00. For cooperative education program students only. Typically offered Fall Spring Summer.

### **ECE 29200 - Industrial Practice II**

Credit Hours: 0.00. For cooperative education program students only. Typically offered Fall Spring Summer.

### **ECE 30001 - Signs And Systems Lab**

**Prerequisite(s):** ECE 30100 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 1.00. Experiments covering the analysis and design of systems in both the time and frequency domains. Typically offered Fall.

### **ECE 30100 - Signals And Systems**

**Prerequisite(s):** ECE 20200 FOR LEVEL UG WITH MIN. GRADE OF C AND MA 26400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Classification, analysis and design of systems in both the time- and frequency-domains. Continuous-time linear systems: Fourier Series, Fourier Transform, bilateral Laplace Transform. Discrete-time linear systems: difference equations, Discrete-Time Fourier Transform, bilateral Z-Transform. Sampling, quantization, and discrete-time processing of continuous-time signals. Discrete-time nonlinear systems: median-type filters, threshold decomposition. System design examples such as the compact disc player and AM radio. Typically offered Fall Spring Summer.

### **ECE 30200 - Probabilistic Methods In Electrical And Computer Engineering**

**Prerequisite(s):** MA 26500 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECE 20200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ME 32500 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECE 30100 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECE 30100 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. An introductory treatment of probability theory, including distribution and density functions, moments, and random variables. Applications of normal and exponential distributions. Estimation of means, variances, correlation, and spectral density functions. Random processes and responses of linear systems to random inputs. Typically offered Fall Summer Spring.

### **ECE 30800 - Systems Simulation And Control Laboratory**

**Prerequisite(s):** ECE 20700 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECE 38200 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 1.00. Instruction and laboratory exercises in the solution of differential equations that arise in the modeling of physical systems. Instruction in the principles of operation and design of linear control systems. Typically offered Fall Spring.

### **ECE 31100 - Electric And Magnetic Fields**

**Prerequisite(s):** MA 26400 FOR LEVEL UG WITH MIN. GRADE OF C- AND PHYS 26100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Continued study of vector calculus, electrostatics, and magnetostatics, and Maxwell's equations. Introduction to electromagnetic waves, transmission lines, and radiation from antennas. Typically offered Fall Spring.

### **ECE 31200 - Engineering Economics And Project Management**

Credit Hours: 3.00. (ME 31100). Introduction to principles of engineering project management and techniques. Topics include technical feasibility studies, project specifications, scheduling, validation, lifecycle costing, and economic analysis. The focus is on managing an engineering project through scheduling, budgeting, resource management, execution and control. Typically offered Summer Fall Spring.

### **ECE 32100 - Electromechanical Motion Devices**

**Prerequisite(s):** (ECE 20200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECE 25500 FOR LEVEL UG WITH MIN. GRADE OF D-)

Credit Hours: 3.00. The general theory of electromechanical motion devices relating electric variables and electromagnetic forces. The basic concepts and operational behavior of DC, induction, brushless DC, and stepper motors used in control applications are presented. Typically offered Fall Spring Summer.

### **ECE 32300 - Electromechanical Motion Devices and Systems Laboratory**

**Prerequisite(s):** ECE 32100 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 1.00. Experiments closely coordinated with ECE 32100 involving measurement of fundamental parameters of various electromechanical devices using modern instrumentation techniques. Computer simulation is used to predict steady-state and dynamic operating characteristics. Comparison of predicted and measured performance is emphasized. Typically offered Fall Spring.

### **ECE 33000 - Microcomputer Programming And Interfacing**

**Prerequisite(s):** EE 37000 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) OR ECE 37000 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. Assembly language, C++ programming, and interfacing techniques; control of digital hardware and peripheral devices by software; software structures and tools used in accomplishing low level hardware control. Typically offered Fall Spring Summer.

### **ECE 33500 - Electronics-Systems**

**Prerequisite(s):** ECE 27500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Topics in multistage amplifiers, feedback amplifiers, oscillators, operational amplifiers, analog systems, power amplifiers and systems, communication systems. Typically offered Fall Spring Summer.

### **ECE 35400 - Software Engineering Design I**

**Prerequisite(s):** ECE 25100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The design and implementation of larger scale software in Java. Introduction of software engineering design concepts. Application of fundamental concepts and programming strategies useful in the context of any programming language. Typically offered Summer Fall Spring.

### **ECE 36200 - Microprocessor Systems And Interfacing**

**Prerequisite(s):** ECE 26400 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECE 27000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. An introduction to basic computer organization, microprocessor instruction sets, assembly language programming, and microcontroller peripherals. Typically offered Fall Spring.

### **ECE 36201 - Microprocessor System Design And Interfacing**

**Prerequisite(s):** ECE 27001 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 4.00. An introduction to basic computer organization, microcontroller instruction sets, microcontroller programming using assembly and C language, microcontroller interfacing and peripherals, and embedded system design. Typically offered Fall.

### **ECE 37000 - Digital Systems-Logic Design**

**Prerequisite(s):** ENGR 15200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECE 15200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Introduction to the logical design and analysis of digital systems; Boolean algebra; combinational logic; minimization techniques; Karnaugh mapping. Introduction to sequential systems analysis and design using VHDL. Typically offered Summer Fall Spring.

### **ECE 37100 - Computer Organization And Design**

**Prerequisite(s):** ECE 37000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Design of computer systems with emphasis on computer hardware. Topics discussed include: Introduction to Basic Design Concepts, Computer Abstraction and Technology, Role of Performance, Instruction Language, Arithmetic for Computers, Processor Data Path and Control, Enhancing Performance with Pipelining, and Exploiting Memory Hierarchy. Students design and implement a RISC processor in the laboratory. Typically offered Fall Spring Summer.

### **ECE 37500 - Digital Integrated Circuits**

**Prerequisite(s):** ECE 27500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Analysis and design of digital integrated circuits. Bipolar and MOS device modeling. MOS integrated circuit design and timing considerations. Bipolar, BiCMOS and GaAs digital circuits. Typically offered Spring.

### **ECE 38000 - Computers In Engineering Analysis**

**Prerequisite(s):** ENGR 15100 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 26400 FOR LEVEL UG WITH MIN. GRADE OF C- AND ME 27500 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECE 20100 FOR LEVEL UG WITH MIN. GRADE OF C- AND ECE 20200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Theory and application of computers in simulation, data acquisition control, instrumentation, and in the solution of engineering problems. Development of mathematical models suitable for computer solutions, and numerical techniques. Traditional and modern software such as FORTRAN, C, LabVIEW, MATLAB, Lotus 1-2-3, and Excel will be used. Typically offered Fall Spring Summer.

### **ECE 38200 - Feedback System Analysis And Design**

**Prerequisite(s):** ECE 20200 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECE 30800 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. In this course, classical concepts of feedback system analysis and associated compensation techniques are presented. In particular, the root locus, Bode diagram, and Nyquist criterion are used as determinants of stability. Typically offered Fall Spring.

### **ECE 38400 - Linear Control Systems**

**Prerequisite(s):** ECE 30100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. (ME 48500). Introduction to classical control theory. Transfer functions, block diagram manipulation, and signal flow graphs. Transient and steady state responses; characteristics and design. Sensitivity analysis and disturbance rejection. System stability. Root locus analysis and design. Frequency response analysis using Bode and polar plots. Nyquist criterion and Nichols chart. Controller design using Bode plots. Laboratory will include design, simulation of topics covered, and a number of practical experiments. Credit not allowed for both ECE 38400 and ME 48500. Typically offered Fall Spring Summer.

### **ECE 39300 - Industrial Practice III**

Credit Hours: 0.00. For cooperative education program students only. Typically offered Fall Spring Summer.

### **ECE 39400 - Industrial Practice IV**

Credit Hours: 0.00. For cooperative education program students only. Typically offered Fall Spring Summer.

### **ECE 39500 - Industrial Practice V**

Credit Hours: 0.00. For cooperative education program students only. Typically offered Fall Spring Summer.

### **ECE 40200 - Electrical Engineering Design Projects**

Credit Hours: 3.00. Lecture sessions provide the student with background information on the design and management of projects. Formal lectures cover, for example, design for manufacturability, design for quality, test and evaluation, reliability and ethics, patents and copyrights, plus case studies. During the laboratory sessions, the students work in teams on a challenging open-ended electrical engineering project that draws on previous coursework. Projects routinely involve standard design facets (such as consideration of alternative solutions, feasibility considerations, and detailed system descriptions) and include a number of realistic constraints (such as cost, safety, reliability, and aesthetics). Completion of BS EE or BS CmpE core curriculum. Typically offered Fall Spring.

### **ECE 42301 - Power Electronics**

Credit Hours: 3.00. An introduction to the design and analysis of switch mode power converters. Topics include: switching characteristics of MOSFET's and IGBT's, properties of DC-DC switch mode power converters and regulation of the output voltage, rectification of utility inputs and power factor correction, review of magnetic circuits, design of high frequency inductors and transformers, design of switch mode DC power supplies, soft switching, synthesis of DC and low frequency AC voltages with application to motor drives and uninterruptible power supplies, and thyristor converters. Use of circuit simulations and hardware. Typically offered Fall Spring Summer.

### **ECE 42600 - Electric Drives**

**Prerequisite(s):** ECE 27500 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECE 31100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Introduction to Electric Drives And Power Electronics. Magnetic circuits and transformers. Principles of DC, synchronous, induction, and stepper motors; equivalent circuits and operating characteristics. Applications to drive systems. Laboratory experiments to illustrate principles. Typically offered Fall Spring.

### **ECE 42900 - Senior Engineering Design I**

**Prerequisite(s):** ECE 27500 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECE 31200 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECE 37000 FOR LEVEL UG WITH MIN. GRADE OF D- AND (ECE 38400 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) OR CS 27500 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECE 30100 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECE 37100 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) ) AND (COM 30700 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 30700 FOR LEVEL UG WITH MIN. GRADE OF D-)

Credit Hours: 3.00. (ME 42900, CE 42900). The senior engineering design courses I and II constitute a two-semester sequence of an interdisciplinary activity. The objective of these courses is to provide engineering students with supervised experience in the process and practice of engineering design. Projects are chosen by the students or the faculty. Students working in teams pursue an idea from conception to realistic design. The course concludes with a substantial written and oral design review before a faculty team. Class discussions will include the ethical responsibility of engineers, impact of engineering solution in a global/societal context, and small-group interactions. Typically offered Fall Spring Summer.

### **ECE 43200 - Elements Of Power System Engineering**

**Prerequisite(s):** ECE 42600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Fundamental concepts of power system analysis, transmission line parameters, basic system models, steady-state performance, network calculations, power flow solutions, fault studies, symmetrical components, operating strategies, and control. Typically offered Fall.

### **ECE 43800 - Digital Signal Processing With Applications**

**Prerequisite(s):** ECE 30100 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECE 30200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. The course is presented in five units. Foundations: the review of continuous-time and discrete-time signals and spectral analysis; design of finite impulse response and infinite impulse response digital filters; processing of random signals. Speech processing; vocal tract models and characteristics of the speech waveform; short-time spectral analysis and synthesis; linear predictive coding. Image processing: two-dimensional signals, systems and spectral analysis; image enhancement; image coding; and image reconstruction. The laboratory experiments are closely coordinated with each unit. Throughout the course, the integration of digital signal processing concepts in a design environment is emphasized. Typically offered Summer Fall Spring.

### **ECE 43900 - Senior Engineering Design II**

**Prerequisite(s):** ECE 42900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The senior engineering design courses I and II constitute a two-semester sequence of an interdisciplinary activity. The objective of these courses is to provide engineering students with supervised experience in the process and practice of engineering design. Projects are chosen by the students or the faculty. Students working in teams pursue an idea from conception to realistic design. The course is climaxed by the presentation of a substantial written report and a formal oral presentation before faculty and students. Typically offered Fall Spring.

### **ECE 44000 - Transmission Of Information**

**Prerequisite(s):** ECE 30100 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECE 30200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. Analysis and design of analog and digital communication systems. Emphasis on engineering applications of theory to communication system design. The laboratory introduces the use of advanced engineering workstations in the design and testing of communication systems. Typically offered Fall Spring.

### **ECE 44800 - Introduction To Communication Theory**

**Prerequisite(s):** ECE 30200 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECE 30100 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECE 27500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. Signal analysis, introduction to digital communication and pulse code modulation. Introduction to amplitude modulation and frequency modulation. Introduction to information theory. Typically offered Fall.

### **ECE 45100 - Industrial Automation**

**Prerequisite(s):** ECE 37000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Operating principles, design, and application of programmable logic controllers. Data acquisition and data analysis using PCs; A to D and D to A converters, sensors and actuators, process variable measurement, signal conditioning; data acquisition and control software applications. Typically offered Summer Spring.

### **ECE 45400 - Software Engineering Design II**

**Prerequisite(s):** ECE 35400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Design methods utilized in the development of complex software systems, and their application in concurrent, real-time, and distributed object-oriented software environments. Typically offered Summer Fall Spring.

### **ECE 45900 - Advanced Digital System Design**

**Prerequisite(s):** ECE 37000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Design, simulation, and testing of digital systems using a hardware description language and programmable logic devices. Complex programmable logic devices (CPLDs) and field programmable gate arrays (FPGAs) will be studied and utilized. Laboratory will include design, simulation, implementation, and testing of designs on available FPGA/CPLD boards. Typically offered Spring.

### **ECE 46300 - Introduction To Computer Communication Networks**

**Prerequisite(s):** ECE 26400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An introduction to the design and implementation of computer communication networks. The focus is on the concepts and the fundamental design principles that have contributed to the global Internet success. Topics include: digital transmission and multiplexing, protocols, MAC layer design (Ethernet/802.11), LAN interconnects and switching, congestion/flow/error control, routing, addressing, performance evaluation, internetworking (Internet) including TCP/IP, HTTP, DNS etc. This course will include one or more programming projects. Typically offered Fall.

### **ECE 46400 - Computer Architecture And Organization**

**Prerequisite(s):** ECE 37100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Design of computer systems with emphasis on computer architecture. Topics discussed include: Fundamentals of Computer Design, Instruction set principles and Examples, Pipelining, Advanced Pipelining and Instruction-Level Parallelism, Memory-Hierarchy Design, I/O Systems, Buses and Arbitration Techniques, Interconnection Networks, and Multiprocessors. Typically offered Fall Spring Summer.

### **ECE 46800 - Introduction To Compilers And Translation Engineering**

**Prerequisite(s):** ECE 37100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. The design and construction of compilers and other translators. Topics include compilation goals, organization of a translator, grammars and languages, symbol tables, lexical analysis, syntax analysis (parsing), error handling, intermediate and final code generation, assemblers, interpreters, and an introduction to optimization. Emphasis is on engineering a compiler or interpreter for a small programming language - typically a C or Pascal subset. Projects involve the stepwise implementation (and documentation) of such a system. Department permission required. Typically offered Fall.

## **ECE 46810 - Operating Systems**

**Prerequisite(s):** ECE 37100 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. The design of systems programs, in particular, operating systems, assemblers, loaders, and compilers. The role of systems programs as the link between computer hardware and software is emphasized. Topics include: multiprogramming, CPU scheduling, memory management, file systems, concurrent processes, multiprocessors, security, and network operating systems. Typically offered Fall Spring Summer.

## **ECE 47600 - Digital Signal Processing**

**Prerequisite(s):** ECE 30100 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECE 23300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Theory and implementation of real time digital signal processing. Survey or continuous filter design using Butterworth, Chebychev, inverse Chebychev, elliptic, and Bessel approximations; type transformations; review of sampling theory, discrete time signals and systems, and Z-transforms; design of IIR filters using impulse invariance, bilinear transform, and a survey of direct techniques; design of FIR filters using Fourier series and windows, least squares error, and optimal equiripple techniques; properties and applications of discrete and fast Fourier transforms. Overview of spectral estimation techniques. Laboratory includes implementation of lecture topics. Typically offered Fall Spring.

## **ECE 48300 - Digital Control Systems Analysis And Design**

**Prerequisite(s):** ECE 38200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ME 48500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The course introduces feedback computer controlled systems, the components of digital control systems, and system models on the z-domain (z-transfer functions) and on the time domain (state variable representations.) The objectives for system design and evaluation of system performance are considered. Various discrete-time controllers are designed including PID-controllers, state and output feedback controllers, and reconstruction of states using observers. The systems with the designated controllers are tested by simulations. Typically offered Spring.

## **ECE 49500 - Selected Topics In Electrical And Computer Engineering**

Credit Hours: 1.00 to 4.00. Topics vary. Permission of department required. Typically offered Fall Spring Summer.

## **ECE 49600 - Electrical And Computer Engineering Projects**

Credit Hours: 0.00 to 18.0. Arrange Hours and Credit. Topics vary. Permission of department required. Typically offered Fall Spring Summer.

## **ECE 50100 - Introduction To Digital Processing Of Speech Signals**

**Prerequisite(s):** ECE 30100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A course on digital processing of speech signals expands and enhances the capabilities of electrical and computer engineering graduates. It is particularly useful for those specializing in areas including communication, signal processing and multimedia processing. The introductory topics in speech processing with computer projects are suitable for graduate students planning to advance their education and career in fields such as audio engineering, human-machine interfacing, speech and speaker recognition applications and multimedia applications. The course is aimed primarily to ECE graduate students specializing in communication and signal processing area. Typically offered Fall Spring Summer.

## **ECE 50201 - Information Theory**

Credit Hours: 3.00. This course is a graduate-level introduction to information theory. Information theory is probably the most elegant mathematical theories, with the most direct and significant engineering impacts to our life in the information age. Information theory has found its applications in many areas, including statistics, computer sciences, biology, economics, etc. The focus of this course will be on the direct application of information theory in digital communications. We believe that the most important part of learning information theory is to learn a new way of thinking about engineering problems. In this sense, this course is beneficial not only to communication majored students, but also to students in other engineering disciplines. Prerequisites: a basic course in probability/statistics. Typically offered Fall Spring Summer.

## **ECE 50300 - Numerical Methods In Engineering**

**Prerequisite(s):** MA 26400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Numerical methods, solutions of equations of one variable, interpolation and polynomial approximation, numerical integration and differentiation, numerical solution of initial-value problems, solution of linear systems, iterative methods for solving linear systems, approximation theory, approximating eigenvalues, solutions of systems or nonlinear equations, boundary-value problems for ordinary differential equations, numerical methods for partial-differential equations. Typically offered Fall Spring Summer.

## **ECE 50500 - Networking Programming**

**Prerequisite(s):** ENGR 15200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course will cover practical aspects of computer network programming, with emphasis on the Client/Server, P2P and distributed applications. The goal of this course is to introduce the students to the basics of computer networks and internet programming. We will introduce the students to the TCP/IP protocol stack and some of its important protocols. Students will also be introduced to multi-tier application development and RPC technologies including: RMI, CORBA, EJB, and Web Services. We will also look at industry trends and discuss some innovative ideas that have recently been developed. Some of the course material will be drawn from the web, industry white papers and internet RFCs. Typically offered Fall Spring Summer.

## **ECE 50600 - Biomedical Instrumentation Design**

Credit Hours: 3.00. This course covers engineering aspects of detection, acquisition and processing of signals from human body. Microcontrollers are used for common biomedical instrumentation design and implementation. The analog and digital electronics, analog to digital and digital to analog conversion, and interfacing with computers via microcontrollers are emphasized. The course is aimed primarily to graduate students specializing in interdisciplinary engineering. Recommended prerequisites: Circuits and Electronics; Analog and Digital Signal Processing; and Programming in C. Typically offered Fall Spring Summer.

## **ECE 50700 - Introduction To Biomedical Imaging**

Credit Hours: 3.00. This course covers the major aspects of modern medical imaging systems including x-ray imaging computed tomography, magnetic resonance imaging, ultrasound imaging, single-photon emission tomography and positron emission tomography. The main emphasis is to explain and exam the fundamental physics and engineering underlying each imaging modality, and the image acquisition, reconstruction and artifact correction. Students will gain technical knowledge and an overview of current status of medical imaging technologies. The course is aimed primarily to graduate students specializing in interdisciplinary engineering. Prerequisite: college level physics, signals and systems, and programming experience in MatLab or C. Typically offered Fall Spring Summer.

## **ECE 50900 - Advanced Electric Drives**

**Prerequisite(s):** ECE 42600 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course covers topics related to advanced methods for DC and AC electric drives control systems. The emphasis is on AC drives vector control techniques that are used when high performances are required to control torque, acceleration, speed and position: hybrid and electric vehicles, wind-electric energy generation, industrial robots, biomedical application, etc. Simulink-MATLAB based computer models are used to study the vector control of induction and synchronous AC machines, and real-time simulations are performed using dSPACE prototyping tool. The course is aimed primarily to ECE graduate students specializing in electric drives, power electronics and power systems area. Typically offered Fall Spring Summer.

## **ECE 51200 - Power Systems**

**Prerequisite(s):** ECE 20200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course covers topics which are becoming increasingly important in present and future power systems such as: electric energy sources including renewable and the environment, AC transmission lines and underground cables, power flow, transformers in power systems, high voltage DC transmission lines, distribution systems, power quality, synchronous generators and reactive power, voltage regulation and stability, transient and dynamic stability, control of power systems, economic dispatch, transmission line faults, and transient over-voltages. Simulink/MATLAB and/or Pspice based computer simulations, use of Power-World simulator and PSCAD/EMTDC software that is widely accepted in industry. Typically offered Fall Spring Summer.

## **ECE 51400 - Advanced Engineering Economics**

**Prerequisite(s):** ME 31100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECE 31200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Effective project managers have complete command of their project costs and a thorough understanding of the financial aspects of their business. This course reviews the fundamentals of accounting; examines project cost accounting principles; applications, and impact on profitability; examines the principles of project costing; covers the elements involved in cash management; introduces the framework for how projects are financed and the potential impact financing has on the projects; and a framework for using an effective project cost system. The course is aimed primarily to engineering graduate students interested in project management. Prerequisite: ME 31100 or ECE 31200 and a course in basic Statistics. Typically offered Fall Spring Summer.

## **ECE 51801 - Quality Control**

Credit Hours: 3.00. (ME 51500). This course examines the design in order to acquire a better product/process quality. Other aspects of design included are robust design, parameter design, or Taguchi Techniques. This course also gives students a current understanding of the techniques and applications of design of experiments in quality engineering design. The students will learn design of quality control systems in manufacturing, use of advanced statistical process

controls, sampling inspection techniques, process capability, and other statistical tools. Also included are vendor sourcing and control tools, methods for establishing specifications and tolerances, quality function deployment, and other quality control techniques. In addition, Six Sigma will be included. The course is aimed primarily to engineering graduate students interested in project management. Prerequisite: Basic Statistics. Typically offered Fall Spring Summer.

### **ECE 51900 - Control Theory II**

**Prerequisite(s):** ECE 38200 FOR LEVEL UG WITH MIN. GRADE OF B- OR ME 48500 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. The approximation of common non-linearities by describing functions and the analysis of resultant system behavior. Review of matrix analysis. Statespace formulation, representation, solution and design. Introduction to optimization and computational methods. Acceptable for credit in the Interdisciplinary Graduate Program in Engineering. Typically offered Fall Spring Summer.

### **ECE 52501 - Statistical Concepts In Engineering**

Credit Hours: 3.00. (ME 53200). This course is directed toward the graduate student who has never had a statistics course or whose last statistics course was taken some time ago and a refresher course is required. The primary purpose of this course is to provide a basic understanding of fundamental probability and statistical principles, their underlying assumptions, and their use in data analysis using real-world engineering problems. The course is aimed primarily to engineering graduate students interested in project management. Prerequisite: Graduate standing and proficiency in Calculus. Typically offered Fall Spring Summer.

### **ECE 52701 - System Engineering**

Credit Hours: 3.00. (ME 53400). In today's environment, there is an ever-increasing need to develop and produce systems that are robust, reliable, high quality, supportable, cost-effective, and responsive to the needs of the customer or user. Reflecting these worldwide trends, System Engineering course introduces students to the full range of system engineering concepts, tools, and techniques, emphasizing the application of principles and concepts of system engineering and the way these principles aid in the development, utilization, and support of systems. The course covers systems engineering from both a technical and management perspective. The course is aimed primarily to engineering graduate students interested in project management. Typically offered Fall Spring Summer.

### **ECE 52900 - Introduction To Microwave Engineering**

**Prerequisite(s):** ECE 31100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course is an introduction to the basic aspects of microwave techniques. The topics will include Maxwell's equations with their physical meaning, and most relevant forms; microwave generation, propagation, boundary conditions, and S parameters. Other topics include transmission lines, Smith Charts, microwave networks, couplers, detectors, mixers, and amplifiers. The course also includes the use of hands-on commercial CAD software. Typically offered Fall Spring Summer.

### **ECE 53000 - Wireless Communication Systems**

**Prerequisite(s):** ECE 30200 FOR LEVEL UG WITH MIN. GRADE OF C AND ECE 31100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course is an introduction to the basic aspects of wireless communications. The topics will include cellular concept, channel assignment, handoff, trunking efficiency, frequency reuse, capacity planning, mobile radio propagation, multipath fading, modulation, multiple access techniques, and wireless networking. Typically offered Fall Spring Summer.

### **ECE 53100 - Fiber Optic Communications**

**Prerequisite(s):** ECE 31100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course deals with the fundamental principles for understanding and applying optical fiber technology in the transmission of information. Study topics include the introduction to optical transmission in fibers, fiber structure and modes, signal degradation, light sources, photodetectors, optical receivers, digital transmission systems, and point to point link analysis. Also included is the use of a simulation tool, Ansoft Designer, that can examine the performance of key components such as laser diodes, optical couplers and optical and photodetectors. Typically offered Fall Spring Summer.

### **ECE 53200 - Computational Methods For Power System Analysis**

**Prerequisite(s):** ECE 43200 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. System modeling and matrix analysis of three-phase power networks. Applications of numerical methods and computers to the solution of a variety of problems related to the planning, design, and operation of electric power systems. Typically offered Fall.

### **ECE 53800 - Digital Signal Processing I**



Credit Hours: 3.00. Theory and algorithms for processing of deterministic and stochastic signals. Topics include discrete signals, systems, and transforms, linear filtering, fast Fourier transform, nonlinear filtering, spectrum estimation, linear prediction, adaptive filtering, and array signal processing. Typically offered Fall.

### **ECE 54400 - Digital Communications**

**Prerequisite(s):** ECE 44800 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. Introduction to digital communication systems and spread spectrum communications. Topics include analog message digitization, signal space representation of digital signals, binary and M-ary signaling methods, detection of binary and M-ary signals, comparison of digital communication systems in terms of signal energy and signal bandwidth requirements. The principal types of spread spectrum systems are analyzed and compared. Application of spread spectrum to multiple access systems and to secure communication systems is discussed. Typically offered Fall.

### **ECE 54700 - Introduction To Computer Communication Networks**

**Prerequisite(s):** ECE 30200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A qualitative and quantitative study of the issues in design, analysis, and operation of computer communication and telecommunication networks as they evolve toward the integrated networks of the future, employing both packet and circuit switching technology. The course covers packet and circuit switching, the OSI standards architecture and protocols, elementary queuing theory for performance evaluation, random access techniques, local area networks, reliability and error recovery, and integrated networks. Typically offered Fall.

### **ECE 55200 - Introduction To Lasers**

Credit Hours: 3.00. An introduction to lasers and laser applications which does not require a knowledge of quantum mechanics as a prerequisite. Topics include: the theory of laser operation; some specific laser systems; nonlinear optics; optical detection; and applications to optical communications, holography, laser-driven fusion, and integrated optics. Typically offered Spring.

### **ECE 55400 - Electronic Instrumentation And Control Circuits**

**Prerequisite(s):** ECE 33500 FOR LEVEL UG WITH MIN. GRADE OF B- AND ECE 30100 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. Analysis and design of special amplifiers, pulse circuits, operational circuits, DC amplifiers, and transducers used in instrumentation, control, and computation. Typically offered Spring.

### **ECE 56900 - Introduction To Robotic Systems**

Credit Hours: 3.00. (C S 56900) The topics to be covered include: basic components of robotic systems; selection of coordinate frames; homogeneous transformations; solutions to kinematic equations; velocity and force/torque relations; manipulator dynamics in Lagrange's formulation; digital simulation of manipulator motion; motion planning; obstacle avoidance; controller design using the computed torque method; and classical controllers for manipulators. Basic knowledge of vector-matrix manipulations required. Typically offered Fall.

### **ECE 57400 - Software Engineering Methodology**

**Prerequisite(s):** ECE 59500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Introduces students to current software process and life cycle models; software management methods for controlling and managing software projects. Topics include: life cycle models, requirements gathering, software planning, software quality, risk management, software inspections, software metrics, software testing, and software management concepts. Team project work is part of the course requirements. Students are expected to use their programming skills and knowledge of data structures to design and test software generated during their team project activities. A good working knowledge of C programming, UNIX tools and data structures. Offered in alternate years. Typically offered Fall.

### **ECE 58900 - State Estimation And Parameter Identification Of Stochastic Systems**

Credit Hours: 3.00. Introduction to point estimation, least squares, Bayes risk, and maximum likelihood. Optimum mean-square recursive estimation for nondynamic stochastic systems. State estimation for discrete-time and continuous-time dynamic systems. Parameter identification of stochastic systems using maximum likelihood. Stochastic approximation, least squares, and random search algorithms. Offered in alternate years. Typically offered Fall.

### **ECE 59500 - Selected Topics In Electrical Engineering**

Credit Hours: 1.00 to 3.00. Formal classroom or individualized instruction on topics of current interest. Permission of instructor required. Typically offered Fall Spring Summer.

### **ECE 60400 - Electromagnetic Field Theory**

**Prerequisite(s):** ECE 31100 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. Review of general concepts (Maxwell's equations, materials interaction, boundary conditions,

energy flow); statics (Laplace's equation, Poisson's equation); distributed parameter systems (classification of solutions, transmission lines, and wave-guides); radiation and antennas (arrays, reciprocity, Huygen's principle); a selected special topic (e.g., magnetostatics, waves in anisotropic media and optical fibers). Offered in alternate years. Prerequisite: Master's student standing or higher. Typically offered Fall Spring.

### **ECE 61000 - Energy Conversion**

Credit Hours: 3.00. Basic principles of static and electromechanical energy conversion. Control of static power converters. Reference frame theory applied to the analysis of rotating devices. Analysis and dynamic characteristics of induction and synchronous machines. State variable analysis of electromechanical devices and converter supplied electromechanical drive systems. Prerequisite: Master's student standing or higher. Typically offered Fall.

### **ECE 66100 - Computer Vision**

Credit Hours: 3.00. This course deals with how an autonomous or a semi-autonomous system can be endowed with visual perception. The issues discussed include: sampling from a topological standpoint; grouping processes; data structures, especially hierarchical types such as pyramids, quadtrees, octrees, etc.; graphic theoretic methods for structural description and consistent labeling; issues in 3-D vision such as object representation by Gaussian spheres, generalized cylinders, etc. Prerequisite: ECE 57000. Typically offered Spring.

### **ECE 66600 - Advanced Computer Systems**

Credit Hours: 3.00. The study of theoretical aspects of advanced computer systems where multiprocessing is used. Topics include the design, architecture, and performance evaluation of multiprocessor memories, interconnection networks, and computational pipelines. Also included are the topics of scheduling, synchronization, resource allocation, load-balancing, partitioning and deadlock avoidance in multiprocessors. Also covered are the design and analysis of parallel algorithms, programming languages and automatic approaches to parallelism detection/exploitation for concurrent computation. Prerequisite: ECE 56500, 60800. Typically offered Spring.

### **ECE 69500 - Advanced Topics In Electrical And Computer Engineering**

Credit Hours: 1.00 to 3.00. Formal classroom or individualized instruction on advanced topics of current interest. Permission of instructor required. Typically offered Fall Spring Summer.

### **ECE 69800 - Research MS Thesis**

Credit Hours: 1.00 to 18.00. Research MS Thesis. Permission of instructor required. Typically offered Fall Spring Summer.

## **Electrical and Computer Engineering Technology**

### **ECET 10000 - Introduction To Electrical And Computer Engineering Technology**

Credit Hours: 3.00. An introduction to the different fields of Electrical and Computer Engineering Technology. Hands-on laboratory techniques along with the exposure to lab procedures and safety will be introduced. Students would be engaged in Internet and Library Research and learn about University wide resources and how to best utilize them. Typically offered Fall Spring Summer.

### **ECET 10001 - Introduction To Electrical And Computer Engineering Technology**

Credit Hours: 3.00. An introduction to the different fields of Electrical and Computer Engineering Technology. Hands-on laboratory techniques along with the exposure to lab procedures and safety will be introduced. Students would be engaged in Internet and Library Research and learn about University wide resources and how to best utilize them. Typically offered Fall Spring Summer.

### **ECET 10200 - Electrical Circuits I**

**Prerequisite(s):** MA 14700 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 4.00. A study of DC electrical circuits, Ohm's Law, Kirchhoff's Laws, series and parallel circuits, power, magnetism, ammeters, voltmeters, ohmmeters, inductance, capacitance, and an introduction to alternating voltages, currents and reactances. Typically offered Fall Spring Summer.

### **ECET 10201 - Direct Current Circuits And Components**

**Prerequisite(s):** MA 14700 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. A study of DC electrical circuits, Ohm's Law, Kirchhoff's Laws, series and parallel circuits, power, magnetism, ammeters, voltmeters, ohmmeters, inductance, capacitance, and an introduction to alternating voltages, currents and reactance. Typically offered Fall Spring Summer.

### **ECET 10300 - Topics In Electrical Technology**

Credit Hours: 1.00 to 4.00. This course includes specialized topics and skills associated with electrical technology. The level of coverage varies according to the audience. Since various electrical/electronics topics may be offered under this title. Does not carry credit toward degree requirements in Electrical Engineering Technology. Typically offered Fall Spring Summer.

### **ECET 10700 - Introduction To Circuit Analysis**

**Prerequisite(s):** MA 15300 FOR LEVEL UG WITH MIN. GRADE OF D (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 4.00. Voltage, current, resistance, Ohm's law, Kirchhoff's current and voltage laws, resistance combinations, and Thevenin's, Norton's and superposition theorems are studied and applied. DC and AC circuits are studied and utilized, with basic AC terminology described. Ideal RC coupling and filter circuits and RC switching circuits are introduced. Fundamental analog circuits with ideal or near-ideal electronic devices are utilized in the lecture and laboratory to enhance the understanding of basic circuit laws and theorems. Typically offered Fall Spring.

### **ECET 10900 - Digital Fundamentals**

Credit Hours: 3.00. This course introduces basic gate and flip-flop logic devices and their application in combinational and sequential digital circuits. Topics include decoders, displays, encoders, multiplexers, demultiplexers, registers, and counters. Logic circuit analysis, implementation of circuits using standard IC chips or programmable logic devices, circuit testing, and troubleshooting are emphasized. Typically offered Fall Spring Summer.

### **ECET 11000 - Computer Systems Architecture**

Credit Hours: 3.00. Introduction to PC based system architecture. Identification, installation and upgrading of microcomputer modules, Windows Operating System. Ability to configure IRQ's, I/O addresses and set switches and jumpers. Distinguish between the popular CPUs. Identify the categories of Memory. Identify the popular types of motherboards, their components and their architecture. Differentiate between the different Buses and their interfaces. Basic concepts and terminology of Networking. Diagnosing and trouble shooting common module problems and system malfunctions. Typically offered Fall Spring Summer.

### **ECET 11700 - Circuits Problem Solution Methods**

Credit Hours: 1.00. This course provides students with structured assistance in developing problem-solving skills in circuit fundamentals. Students work together in small groups to complete class assignments. Typically offered Fall Spring Summer.

### **ECET 11900 - Digital Problem Solution Methods**

Credit Hours: 1.00. This course provides students with structured assistance in developing problem-solving skills in digital fundamentals. Students work together in small groups to complete class assignments. Typically offered Fall Spring Summer.

### **ECET 15200 - Electrical Circuits II**

**Prerequisite(s):** ECET 10200 FOR LEVEL UG WITH MIN. GRADE OF D- AND MA 14800 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 4.00. A study of DC and AC electrical circuits, network theorems, j operator, phasors, reactances, impedances, phase relationships, power, resonance, ideal and air-core transformers and an introduction to graphical techniques and an introduction to graphical techniques and transients. Typically offered Fall Spring Summer.

### **ECET 15201 - Alternating Current Circuits And Analysis**

**Prerequisite(s):** ECET 10201 FOR LEVEL UG WITH MIN. GRADE OF D- AND MA 14800 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. AC electrical circuits, including J-operator, phasors, reactance, impedance, and power are studied. Circuit laws, network theorems, and the fundamental concepts of Fourier analysis are applied in the study of passive filters, resonant circuits, single-phase and three-phase circuits, and elementary magnetic circuits. Typically offered Fall Spring Summer.

### **ECET 15400 - Analog Electronics I**

Credit Hours: 4.00. A study of electronic devices such as the diodes, FET, BJT, Thyristors, MOSFET and operational amplifier. Analysis and design of electronic circuits such as the comparator, amplifier, filter, oscillator and voltage regulator. Other topics include the heat sinks and thermal design. Typically offered Fall Spring.

### **ECET 15401 - Electronic Components And Circuits**

Credit Hours: 3.00. A study of electronic devices such as the diodes, FET, BJT, Thyristors, MOSFET and operational amplifier. Analysis and design of electronic circuits such as the comparator, amplifier, filter, oscillator and voltage regulator. Other topics include the heat sinks and thermal design. Typically offered Fall Spring Summer.

### **ECET 15700 - Electronics Circuit Analysis**

**Prerequisite(s):** ECET 10700 FOR LEVEL UG WITH MIN. GRADE OF D AND MA 15300 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 4.00. Capacitors, inductors, switching circuits, transformers, rectifiers, linear regulators, dependent sources, operational amplifiers, BJT- & MOSFET-based small-signal amplifiers, waveform generation, and programmable analog devices are studied. Circuit fundamentals such as Kirchhoff's laws are utilized in analysis and design of circuits. Computer simulation is used. Typically offered Fall Spring.

### **ECET 15900 - Digital Applications**

**Prerequisite(s):** ECET 10900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. This course continues the study of combinational and sequential digital applications using

programmable logic devices and standard logic devices. The input and output characteristics of the various common logic families, the appropriate signal conditioning techniques for on/off power interfacing, digital and analog signal interfacing techniques, and memory devices and systems are discussed. Typically offered Fall Spring Summer.

### **ECET 15901 - Digital Circuits And Applications**

**Prerequisite(s):** ECET 10900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course continues the study of combinational and sequential digital applications using programmable logic devices and standard logic devices. The input and output characteristics of the various common logic families, the appropriate signal conditioning techniques for on/off power interfacing, digital and analog signal interfacing techniques, and memory devices and systems are discussed. Typically offered fall Spring Summer.

### **ECET 19600 - Introduction To EET And Projects**

Credit Hours: 2.00. This course introduces ECET projects and the ECET program. Included are topics about ECET projects, options and electives in the ECET curriculum, university services, study techniques and student employment and career opportunities. Also introduced are techniques for proper and safe use of basic hand and machine tools, and the processes of fabricating, assembling and testing printed circuit boards. Typically offered Fall Spring Summer.

### **ECET 20100 - Mathematical Modeling And Simulation**

**Prerequisite(s):** MA 14800

Credit Hours: 3.00. Introduction to the computer based on methods of mathematical modeling and simulation of electrical and electronic circuits and systems, instrumentation and measurement procedures. Students will learn to use the up-to-date software tools. Topics will also include probability and statistical methods. Typically offered Fall Spring Summer.

### **ECET 20700 - AC Electronics Circuit Analysis**

**Prerequisite(s):** ECET 15700 FOR LEVEL UG WITH MIN. GRADE OF D AND MA 15400 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 4.00. AC circuits including the j operator, phasors, reactance and impedance are studied. Circuit laws, network theorems, and the fundamental concepts of Fourier analysis are applied and used in the study of topics such as passive filters, IC filters, amplifiers, resonant circuits, single-phase and three-phase circuits. Computer aided analysis of circuits is used. Typically offered Fall Spring Summer.

### **ECET 20900 - Introduction To Microcontrollers**

**Prerequisite(s):** ECET 15900 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECET 21000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. This course is an introduction to microcontroller hardware and software, focusing on embedded control applications. Interconnections of components, peripheral devices, bus timing relationships, structured C-language programming, debugging, input/output techniques, and use of PC based software development tools are studied. Typically offered Fall Spring Summer.

### **ECET 20901 - Microcontroller Applications**

**Prerequisite(s):** ECET 15901 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECET 21000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An introduction to microprocessor hardware and software focusing on embedded control applications. Interconnection of components, peripheral devices, bus timing relationships, structured C language programming, debugging, input/output techniques, and use of PC-based software development tools are studied. Typically offered Fall Spring Summer.

### **ECET 21000 - Structured C++ Programming For Electromechanical Systems**

Credit Hours: 3.00. Use of C++ in structured programming and Top Down Design techniques. Problem solving in technology applications is emphasized. The laboratory exercises will emphasize the interfacing of electromechanical systems with software and generation of embedded coding. Typically offered Fall Spring Summer.

### **ECET 21200 - Electrical Power And Machinery**

**Prerequisite(s):** ECET 15200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. A study of power transformers, single and polyphase circuits. The study of DC machines, AC single and polyphase synchronous and induction machines, and an introduction to power electronics. Typically offered Fall Spring Summer.

### **ECET 21201 - Electrical Power And Motors**

**Prerequisite(s):** ECET 15201 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A study of power transformers, single and poly-phase circuits. The study of DC machines, AC

single and polyphase synchronous and induction machines, and an introduction to power electronics. Typically offered Fall Spring Summer.

### **ECET 21300 - Survey Of Electricity And Electronics**

Credit Hours: 4.00. An introduction to fundamentals of electricity and electronics for non-ECET students. Electrical safety and the use of test equipment will be covered. Topics include: basic DC and AC electrical and electronics concepts, reading and drawing schematics, circuit layout and design, electrical troubleshooting, theory and operation of motors and generators, high voltage and PLC wiring. Course not open to ECET students. Typically offered Summer Fall Spring.

### **ECET 21400 - Electricity Fundamentals**

Credit Hours: 3.00. An introduction to elemental electrical components and their characteristics, basic electrical circuit theory, and use of basic laboratory test equipment, electrical motors, and industrial motor controls. Not open to EET students. Typically offered Fall Spring Summer.

### **ECET 21401 - Introduction To Electricity And Electronics**

Credit Hours: 3.00. This course is an introduction to the basics of electricity and electronics. Emphasis is on application of theory for the non-ECET student. The course covers basic AC & DC Circuit Analysis; Electrical and Electronic components, their characteristics and applications: Analog and digital circuits, motors and controls will also be covered in this course. Typically offered Fall Spring Summer.

### **ECET 21700 - Introduction To Process Control**

**Prerequisite(s):** ECET 15400 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECET 21400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course introduces fundamental concepts of process control systems, open-loop and closed-loop controls. Input output characteristics of process elements, dead time, and span. Switching analysis of process hardware. Modeling of static and dynamic processes. Diode, transistor and SCR switching characteristics. Measurements of electronic signals. Solid-state switching devices. Loading effects and power interfaces. Noise and signal conditioning and grounding. Studying cables and their characteristics. Various industrial instrument interface buses, standards, and practices. Typically offered Spring Fall.

### **ECET 23100 - Electrical Power And Controls**

**Prerequisite(s):** MA 15400 FOR LEVEL UG WITH MIN. GRADE OF D AND ECET 15700 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 4.00. This course introduces magnetic materials and properties followed by analysis of transformers and power conditioning equipment, induction motors, and single-phase and three-phase power systems. Motor control devices, programmable logic controllers, PLC input and output devices, and power systems communications and monitoring are introduced. Typically offered Fall Spring Summer.

### **ECET 23300 - Electronics And Industrial Controls**

Credit Hours: 3.00. Familiarization with electronics as applied to industry. Basic theory and application of electronics to controls for industrial equipment and data processing. Typically offered Spring.

### **ECET 25700 - Consumer Power Electronics**

**Prerequisite(s):** ECET 20700 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 4.00. This course is a study of the application of circuit techniques to amplifiers used in power and RF electronics, including bipolar junction transistors, power MOSFETs, thyristors, RF amplifiers, switching power supplies, and appropriate applications. Computer-aided analysis of circuits is used. Typically offered Fall Spring Summer.

### **ECET 26200 - Programmable Logic Controllers**

**Prerequisite(s):** ECET 15200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECET 21400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is an introduction to programmable logic controllers to perform motor control and process control related functions on external input and output devices. Topics include: sequencing, switching, timing, data manipulation, counting, actuation signal control, analog and digital input. This course also covers motor sizing, servomotor drives, and Human Machine Interface (HMI). Typically offered Fall Spring.

### **ECET 26500 - Computer Networks**

Credit Hours: 3.00. This course is an introduction to Data Communications and Networking hardware. The emphasis is on network hardware and topologies, physical interface standards, construction of transmission media, Local and Wide Area Network protocols as they relate to network hardware, hands-on Local Area Networks installation and troubleshooting. Typically offered Summer Fall Spring.

### **ECET 29100 - Industrial Practice I**

Credit Hours: 0.00 to 5.00. Practice in industry, with written reports of this practice by the co-op student. Admission to the cooperative education program. Typically offered Fall Spring Summer.

### **ECET 29200 - Industrial Practice II**

Credit Hours: 0.00 to 5.00. Practice in industry, with written reports of this practice by the co-op student. Typically offered Fall Spring Summer.

### **ECET 29600 - Electronic System Fabrication**

**Prerequisite(s):** ECET 15900 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECET 15400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 2.00. The course includes electronic schematic, printed circuit board design and fabrication using Electronic Design Automation (EDA) tools. Designing electronic circuit schematic, schematic annotation, netlist file generations, electronic packaging selection, printed circuit board (PCB) artwork design using auto router and manual router software tools. Populate the printed circuit board with electronic components; solder using hand tools and testing/debug the electronic hardware into an operational system using bench-top instruments. Course teaches prototyping electronic projects. Typically offered Fall Spring.

### **ECET 29700 - Electronic Prototype Development**

**Prerequisite(s):** ECET 15900 FOR LEVEL UG WITH MIN. GRADE OF D AND ECET 19600 FOR LEVEL UG WITH MIN. GRADE OF D AND ECET 20700 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 4.00. This course introduces basic concepts in the development of an electronic product prototype. The student develops an electronic device by utilization of: electronic design automation (EDA), design for testing (DFT), surface mount technology (SMT), design for manufacturability (DFM), component characteristic selection techniques, and basic failure predictions. New construction and testing techniques are introduced. The final prototype is presented in a written and/or oral report. Typically offered Fall Spring.

### **ECET 29900 - Selected Electrical Engineering Technology Subjects**

Credit Hours: 0.00 to 6.00. Hours and subject matter to be arranged by staff. Permission of instructor required. Typically offered Summer Fall Spring.

### **ECET 30200 - Introduction To Control Systems**

**Prerequisite(s):** ECET 20700 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECET 20900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. This first course in industrial controls is applications oriented and includes on-off type open- and closed-loop control systems, and analog-based systems. Major topics include relay and programmable controller-based systems. Typically offered Fall.

### **ECET 30300 - Communications I**

**Prerequisite(s):** ECET 15400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. Signal representation in time and frequency domains, concepts of noise, impedance matching, mixing, heterodyning, filters, tuned amplifiers, oscillators and voltage controlled oscillators, phase-lock-loop, analog and digital modulation in amplitude, frequency and phase and multiple user communication systems. Others topics include transmission lines, electromagnetic wave propagation in space, and antenna systems. Typically offered Fall Spring Summer.

### **ECET 30301 - Telecommunication Systems**

**Prerequisite(s):** ECET 15401 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Signal representation in time and frequency domains, concepts of noise, impedance matching, mixing, heterodyning, filters, tuned amplifiers, oscillators and voltage controlled oscillators, phased-lock-loop, analog and digital modulation in amplitude, frequency and phase and multiple user communication systems. Other topics include transmission lines, electromagnetic wave propagation in space, and antenna systems. Typically offered Fall Spring Summer.

### **ECET 30400 - Introduction To Communication Systems**

**Prerequisite(s):** ECET 20700 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 4.00. The theory and techniques of sending information (voice, music, data, etc.) from one location to another is studied from a systems point of view. This includes signal analysis, various modulation techniques, transmitters, receivers, video, impedance matching networks and filters through the VHF frequency spectrum. In addition, wireless communication, digital communication and special topics of current interest are introduced. This course also incorporates a student-based communication design and analysis laboratory. Typically offered Fall Spring.

### **ECET 30700 - Analog Network Signal Processing**

**Prerequisite(s):** ECET 25700 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 4.00. This is an advanced course in network analysis that stresses network theorems and solutions of time- and frequency-domain problems. Transform circuit and signal analysis using Laplace and Fourier techniques are developed, culmination in active filter design applications. Software techniques, such as MATLAB(r) and LabVIEW(tm), to solve mathematical problems are employed. Typically offered Fall Spring.

### **ECET 30900 - Advanced Embedded Microcontrollers**

**Prerequisite(s):** ECET 20900 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 4.00. A course emphasizing the advanced applications of embedded microcontrollers. Included are microcontroller architecture, use of advanced programmable counter/timer arrays, analog interfaces, serial communication, and other peripherals. Typically offered Fall Spring Summer.

### **ECET 31000 - Biomedical Instrumentation I**

**Prerequisite(s):** ECET 15400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An introduction to physiological variants, the concept of measurements and problems encountered in measurements from a living human body. Detail study of transducer principles and circuit techniques in measurement in circulatory, digestive, muscular and nervous systems. System approach to intensive care monitoring and data acquisition. Evaluation of biomedical instruments to meet performance specifications and electrical safety. Typically offered Fall Spring Summer.

### **ECET 31200 - Power Electronics**

**Prerequisite(s):** (ECET 15400 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECET 21700 FOR LEVEL UG WITH MIN. GRADE OF D-) AND ECET 21200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. A study of application of power electronic circuits that enable efficient electric power conversion in industrial and power production systems such as motor drives, electric vehicles, wind turbines, and photovoltaic. The concepts are then applied to develop controllers for dc-to-dc converters and dc-to-ac inverters, using industry standard practices and equipment. Closed loop controls of dc-to-dc converters are implemented.

### **ECET 31201 - Power Electronics Fundamentals**

**Prerequisite(s):** ECET 15401 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECET 21700 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECET 21201 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A study of application of power electronic circuits that enable efficient electric power conversion in industrial power production systems such as a motor drives, electric vehicles, wind turbines, and photovoltaic. The concepts are then applied to develop controllers for dc-to-dc converters and dc-to-ac inverters, using industry standard practices and equipment. Closed loop controls of dc-to-dc converters are implemented. Typically offered Fall Spring Summer.

### **ECET 31400 - RF Signals And Systems**

**Prerequisite(s):** ECET 30400 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 4.00. Wave propagation and microwave circuit design are studied. This course provides a solid background for continued study of wireless communications. Topics include signal analysis, Maxwell's equations, plane wave propagation, reflection, refraction, diffraction, propagation losses, waveguides, antennas, RF signal measurement, transmission lines, impedance matching, Smith chart applications, RF circuit design, S-parameters, and RF PCB layout. Typically offered Fall Spring Summer.

### **ECET 31500 - Digital Design And Implementation Using Programmable Logic Devices (PLDs)**

**Prerequisite(s):** ECET 15900 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECET 29600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. Review of digital logic (sequential and combinational) design and implementation using conventional techniques. Digital system design and implementation as currently practiced in industry will be covered using state-of-the-art computer software. High level notations using PLD technology will be introduced for the synthesis of digital hardware. Typically offered Fall Spring Summer.

### **ECET 32400 - Fundamentals Of Electromagnetics**

**Prerequisite(s):** ECET 30400 FOR LEVEL UG WITH MIN. GRADE OF D- OR EET 30400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. This course introduces the fundamentals of electromagnetics in both theory and application. In the course wave propagation, transmission lines, antenna theory, and antenna design are studied. Other topics include

Maxwell's equations, planewave propagation, reflection, refraction, diffraction, propagation losses, RF signal measurement, impedance matching, and Smith chart applications. Typically offered Fall.

### **ECET 32500 - Computer Architecture, Modeling And Performance Analysis**

Credit Hours: 4.00. A study of the architecture, hardware, and system software of computers. Fundamental principles associated with the operation of computers are introduced and studied. Modeling and analysis of computer subsystems, their performance, and interactions are also studied. Typically offered Summer Fall Spring.

### **ECET 33000 - Industrial Programming And Networking**

**Prerequisite(s):** ECET 26200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Networking industrial devices including servers, computers, smart sensors, controllers, and input/output devices. Programming applications for transferring data between industrial applications. Typically offered Summer Fall Spring.

### **ECET 33100 - Generation And Transmission Of Electrical Power**

**Prerequisite(s):** ECET 21200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECET 23100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. A study of the generation and transmission of electrical energy. Includes modeling and analysis of synchronous alternators, transformers, and transmission lines, plus analytical and computer methods of solving load flow and fault conditions on balanced and unbalanced three-phase systems. Introduces techniques used by utilities for protection and economic operation of power systems. Typically offered Fall Spring Summer.

### **ECET 34500 - Advanced Digital Systems**

Credit Hours: 4.00. Digital system design with an emphasis on Application Specific Integrated Circuits is studied. System considerations, including design entry, simulation, and testing; selection of ASIC methodology, process technology, and packaging; and IC fabrication are addressed. Hierarchical circuit designs are implemented with CPLDs or FPGAs using a Hardware Description Language. Typically offered Fall.

### **ECET 35700 - Real-Time Digital Signal Processing**

**Prerequisite(s):** ECET 20900 FOR LEVEL UG WITH MIN. GRADE OF D AND ECET 30700 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 4.00. A study of the architecture, instruction set and hardware and software development tools associated with a fixed-point general purpose DSP VLSI processor. Fundamental principles associated with the processing of discrete time signals are also introduced along with the implementation of some common applications such as waveform generation, audio effects, FIR and IIR digital filtering and DFT and FFT based spectral estimation. Typically offered Fall Spring Summer.

### **ECET 35900 - PC Interfacing And Applications**

**Prerequisite(s):** ECET 20900 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 4.00. A course emphasizing PC Systems and the techniques to create PC interfacing systems to solve real-world control and data collection problems. Graphical user-interfaces and driver software for custom applications are emphasized. Typically offered Fall.

### **ECET 36200 - Process Control Instrumentation**

**Prerequisite(s):** ECET 21401 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECET 21700 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECET 15401 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course reviews process control principles and practices. Topics include: analog and digital signal conditioning; thermal, mechanical and optical transducers; electromechanical, pneumatic and hydraulic control devices, and the application of computer-aided tools for process control instrumentation. Various control algorithms and control loop characteristics are also studied. Typically offered Fall Spring.

### **ECET 36700 - Internetworking and TCP/IP**

**Prerequisite(s):** ECET 26500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is a continuation of EET 26500. The emphasis is on integrating the TCP/IP protocol suite on networking and internetworking devices such as repeaters, bridges, routers, gateways and switches. Other topics from emerging networking technologies will be considered as applied to high speed networks. Typically offered Summer Fall Spring.

### **ECET 37200 - Process Control**

**Prerequisite(s):** ECET 25700 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. A study of the basic elements of closed-loop analog and digital systems. Topics include characteristics of heat, servo motion, and process tank components and systems. Also covered are closed-loop tuning,



troubleshooting, documentation, diagram standards and performance specifications. Several sensor types and interpretation of their static and dynamic specifications are included. Commercial controllers employed include analog, embedded microprocessor and PLC based systems. Software is used to model components and analyze open and closed-loop systems. Typically offered Spring.

### **ECET 37301 - Renewable Energy Sources And Modeling**

Credit Hours: 3.00. This course is an introduction to renewable energy sources. Topics include energy conversion fundamentals, efficiency and renewable energy technologies such as wind, solar and geothermal. Mathematical modeling and system integration will be introduced. Typically offered Fall Spring Summer.

### **ECET 38000 - Professional Issues In EET**

Credit Hours: 1.00. This course addresses professional ethics, legal issues, professional development, technology transfer, and corporate culture as they relate to EET graduates. Information relating to personal job and career choices, resumes, and interviews are included. Typically offered Fall Spring Summer.

### **ECET 38100 - Electrical Distribution Systems**

Credit Hours: 4.00. A study of the design and operation of electric distribution systems including estimated demand, demand calculations, energy conservation, faults on power systems, power quality, power factor improvement, electric rates, voltage drops, protective devices, illumination, and the applicable portions of the National Electric Code (NEC). Both new facilities and additions to existing facilities are included. Typically offered Summer Fall Spring.

### **ECET 38400 - Advanced Mathematical Methods In EET**

**Prerequisite(s):** ECET 15200 FOR LEVEL UG WITH MIN. GRADE OF D- AND MA 16019 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Analog-To-Digital and Digital-To-Analog Conversion, Digital Signals, Difference Equations and Filtering, Convolution and Filtering, Z-Transforms, Fourier Transforms and Filter Shape, Digital Signal Spectra. Mathematical Modeling using MATLAB is employed. Typically offered Fall Spring Summer.

### **ECET 39200 - Digital Signal Processing**

**Prerequisite(s):** ECET 38400 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECET 20900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Introduction to the fundamentals of Digital Signal Processing: discrete-time principles, sampling theorem, discrete Fourier transform, fast Fourier transforms, time and frequency domain considerations, Z-transform, solution of difference equations and design of digital filters. Typically offered Fall Spring Summer.

### **ECET 39300 - Industrial Practice III**

Credit Hours: 0.00 to 5.00. Practice in industry, with written reports of this practice by the co-op student. Typically offered Fall Spring Summer.

### **ECET 39400 - Industrial Practice IV**

Credit Hours: 0.00 to 5.00. Practice in industry, with written reports of this practice by the co-op student. Typically offered Fall Spring Summer.

### **ECET 39600 - Project Development and Management**

Credit Hours: 4.00. This is a structured course in electronic projects, with an emphasis on planning and design alternatives to meet cost, performance, and user-interface goals. A software tool is utilized for project management. Students work in teams to solve problem assignments using guided design techniques. Creativity is stressed, and the different approaches taken by different teams are compared and discussed. Typically offered Fall Spring Summer.

### **ECET 39700 - Electronic Project Engineering**

Credit Hours: 3.00. Introduction to electronic project engineering principles and techniques. Topics include technical feasibility studies, project specification, scheduling, testing, validation and cost estimating. Focus is on teamwork. These principles and techniques are emphasized through the design and execution of an electronic project. Typically offered Fall Spring Summer.

### **ECET 40400 - Wireless Communication And Networking**

**Prerequisite(s):** ECET 30300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An introduction to components, systems and the enabling technology underlying wireless communication and networking. Topics include basics of telegraphic engineering, wireless channel modeling, cellular telephony, signal coding, Inter Symbol Interference, Forward Error Coding techniques, modulation techniques, antenna diversity, spread spectrum communication, frequency hopping, mobile and multi-access communication. Introduction of wireless networking standards, infrared and laser communication, wireless location, and RFID systems. Typically offered Fall Spring Summer.

### **ECET 40700 - Introduction To Biomedical Electronics**

**Prerequisite(s):** ECET 25700 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. Introduction to general principals, theories and equipment used in the medical environment.

Physiological systems covered include the cardiovascular and respiratory systems. Equipment covered includes transducers, physiological monitoring systems, cardiovascular therapy systems, respiratory therapy systems and surgical equipment. Theory and testing of equipment for safety and performance are also covered. Typically offered Fall.

### **ECET 40800 - Advanced Biomedical Electronics**

**Prerequisite(s):** ECET 40700 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. More in-depth coverage of principals, theories and equipment used in the medical environment, with a focus on specialized areas. Physiological systems covered include the renal and nervous system. Equipment covered includes dialysis, obstetrics (OB) monitoring, electroencephalography (EEG), medical laboratory and medical lasers. Imaging modalities covered include ultrasound, nuclear medicine, and MRI. Typically offered Spring.

### **ECET 40900 - Medical And Industrial Imaging Systems**

**Prerequisite(s):** ECET 25700 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Introduction to the physics, principals, theories and equipment used in projection radiation based imaging systems used in both industry and healthcare. This includes: X-ray; high voltage / frequency generation; fluoroscopy; industrial quality assurance and measurement systems; and computed tomography (CT). Imaging processing, radiation protection and quality assurance are also covered. Typically offered Summer.

### **ECET 41000 - Physics Of Radiologic Imaging**

Credit Hours: 3.00. Diagnostic imaging is among the rapidly advancing fields of non-invasive clinical medicine. This course will cover the physics principles behind imaging techniques. Quality assurance of diagnostic x-ray equipment and radiation safety also will be discussed. This course could be used as a Science/Math elective. Typically offered Fall Spring Summer.

### **ECET 41200 - Power Electronics Design And Applications**

**Prerequisite(s):** ECET 31200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. Introduction to the application of power electronics in ac and dc motor drives, dc switching power supplies, solid-state relays, inverters, uninterruptible and standby power supplies and utility interfaces. The course covers the topologies and design of power trains, drivers for the switching devices, protection, and the strategies for control and power factor improvement. Typically offered Fall Spring Summer.

### **ECET 41300 - Digital And Data Communications**

**Prerequisite(s):** ECET 30300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. A study of modern digital communication systems. Topics include modulation techniques for digital transmission of data, error detection and correction, data compression techniques, Time Division Multiple Access (TDMA), Code Division Multiple Access (CDMA), etc. Topics in digital communication related to wired and wireless transmission media, along with fiber optics will be discussed. Topics in high speed switched networks will be introduced. Typically offered Fall Spring.

### **ECET 41400 - Wireless Communications**

Credit Hours: 4.00. Practical and theoretical aspects of wireless communication system design are studied; particular emphasis is on mobile communications. Frequency reuse, hand-off, cell splitting, indoor/outdoor propagation, cochannel interference, frequency management, channel assignment techniques, cell-site antennas, handset antenna/human body interaction, switching and traffic, AMPS, GSM, TDMA, and CDMA are studied. Typically offered Fall Spring Summer.

### **ECET 42300 - Current Trend In Telecom Technology With Variable Title**

**Prerequisite(s):** ECET 41300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00 or 4.00. This is a variable title course. A variety of current trends and topics in Telecommunications will be taught. Topics will vary. Typically offered Fall Spring Summer.

### **ECET 42400 - Wireless Systems: Design And Measurement**

Credit Hours: 4.00. In this course wireless RF signals and microwave circuit designs are studied. Topics covered in the course include RF passive systems, power dividers, couplers, RF amplifiers, RF filters, impedance matching, planar antennas, resonators, VCO's, RF simulation and high frequency PCB layout. Typically offered Spring.

### **ECET 44500 - New Tech Computer Systems With Variable Titles**

**Prerequisite(s):** ECET 21000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00 or 4.00. The impact of new technologies on computer hardware and software is studied. Typically offered Fall Spring Summer.

### **ECET 45500 - Object Oriented System Design**

**Prerequisite(s):** ECET 21000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Course deals with the Designing of Graphic User Interface (GUI) applications using Object Oriented Programming (OOP) methodology utilizing C++ language constructs. The course will cover: the basics of Windows programming, developing Windows applications using Object Windows, Windows Functions and Messages with emphasis on interfacing with the physical objects communicating with the software objects in the realm of Computer Communications and Networking. Typically offered Fall Summer Spring.

### **ECET 45600 - Operating System With Embedded System Design**

**Prerequisite(s):** ECET 20900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The course deals with multi-processor system design. The multi-processor system's hardware and software design are integrated in conjunction with the underlying embedded operating system(s). Geographically distributed sub-systems are integrated in the system under the discourse and design.

### **ECET 46200 - Application Of Computers In Process Control**

**Prerequisite(s):** ECET 21700 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. A study of industrial process control systems. Study of continuous- and discrete-state process control. Analyzing process characteristics and controller tuning. Closed loop control system characteristics. System stability, open loop and closed loop transient response. Single, multivariable and cascade control system. Supervisory, direct computer control, and distributed control system. Computer-aided statistical process control (SPC). Typically offered Fall Spring Summer.

### **ECET 46500 - Advanced Topics in Computer Networks**

**Prerequisite(s):** ECET 36700 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is a continuation of EET 36700. Topics include emerging technologies in computer networks and related hardware, modeling, simulation, and analysis of existing LAN and WAN topologies. The course emphasizes hardware-software integration with respect to computer networks. Typically offered Summer Fall Spring.

### **ECET 46700 - IP Telephony**

**Prerequisite(s):** ECET 36700 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course provides an introduction to converged voice and data networks as well as challenges faced by its various hardware and software technologies. Students will learn the architecture, components, programming, functionality, and features of Voice Over IP (VoIP) such as Voice Manager, Voice-Mail solutions, Call Control, as well as Quality of Service (QoS) technologies. Typically offered Fall Spring Summer.

### **ECET 47400 - Digital Communications**

**Prerequisite(s):** STAT 30100 FOR LEVEL UG WITH MIN. GRADE OF D- AND (ECET 30400 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) OR EET 30400 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) )

Credit Hours: 4.00. This is an advanced course in digital communications concepts and applications. Topics include analog message digitization, signal space representation of digital signals, binary and M-ary signaling methods, the detection of binary and M-ary signals, modulation of digital signals, signaling techniques, digital multiplexing and protocols. Applications of transport technologies using underlying communication protocols are discussed. Transfer of digital information through diverse communication media is emphasized. There is an introductory treatment of probability theory, including distribution and random variables; with the applications of normal and exponential distributions to traffic analysis. Practical application of the technologies and protocols are investigated in the laboratory. Typically offered Fall Spring Summer.

### **ECET 48300 - Network Fundamentals With Microcontrollers**

Credit Hours: 4.00. The principles of local-area network communications are studied. Emphasis is on hardware, signals, the hardware/software interface, and protocols commonly associated with embedded systems. Methods, tradeoffs, and performance of various addressing, error detection and correction, and collision detection are studied. Relationships with the 7-layer OSI model are examined. Typically offered Spring.

### **ECET 48800 - Automatic Test Instrumentation**

Credit Hours: 4.00. An introduction to automated test equipment (ATE). Emphasis is placed on understanding the philosophy of testing in maintaining product conformance and control. The operation of the GPIB, VXI bus, or other integrated automatic test sets with a high level computer language control interface with data logging and analysis is presented. Typically offered Summer Fall Spring.

### **ECET 49000 - Senior Design Project Phase I**

**Prerequisite(s):** (ECET 30300 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECET 30301 FOR LEVEL UG WITH MIN. GRADE OF D-) AND (ECET 31200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ECET 31201

FOR LEVEL UG WITH MIN. GRADE OF D-) AND ECET 39200 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECET 45600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 1.00 or 2.00. An extensive individual design and/or analytical project performed in consultation with one or more faculty advisors. Collaboration with representatives of industry, government agency, or community institutions is encouraged. Evidence of extensive and thorough laboratory performance is required. PHASE I includes, but is not limited to, faculty acceptance of project proposal, defining and limiting project objectives, initial research and source contacts, procurement of materials, and periodic progress reports. Typically offered Fall Spring Summer.

### **ECET 49001 - Senior Project I**

**Prerequisite(s):** ECET 30700 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECET 37200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 2.00. An extensive individual or group design project, carried out with guidance from a faculty adviser. Phase I includes: determining customer requirements; considering design alternatives; deciding upon and drawing the functional blocks of the project; listing a projected bill of materials (BOM); drafting a project timeline; and writing a formal project proposal. Typically offered Fall Spring Summer.

### **ECET 49100 - Senior Design Project Phase II**

**Prerequisite(s):** ECET 49000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 2.00 to 5.00. PHASE II includes, but is not limited to, continued research and finalized design, oral presentation to faculty and other interested parties, and a written technical report. Typically offered Fall Spring Summer.

### **ECET 49101 - Senior Project II**

**Prerequisite(s):** ECET 49001 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 2.00. Conclusion of the design project begun in ECET 49001. Project's functional blocks are built and tested; blocks are integrated into final, working project; formal report, slide presentation and video are produced. Typically offered Fall Spring Summer.

### **ECET 49900 - Electrical Engineering Technology**

Credit Hours: 1.00 to 9.00. Hours and subject matter to be arranged by staff. Cannot be used to replace EET 48000, 49600, or 49700. Permission of instructor required. Typically offered Fall Spring Summer.

### **ECET 52100 - Solar Energy Systems**

Credit Hours: 3.00. An advanced course in solar energy topics, including radiation from the sun, technology and design of photovoltaic systems, solar lighting systems, and solar-bio systems. Topics will also include energy storage using hydrogen and new advancements in solar technology. Course may be offered in classroom based, hybrid, or distance formats. Typically offered Fall Spring Summer.

### **ECET 55100 - Optical Networking**

Credit Hours: 3.00. An introduction to components, systems, and the enabling technology underlying the optical networking. The enabling technology includes single-wavelength and Wavelength Division Multiplexing (WDM) systems. Optical layer architecture and design are the primary focus of the course, which includes current infrastructure architecture, the operation, deployment, administration and maintenance of networks, the fault and alarm handling, the protection strategies, the access schemes and interfacing with wireless/copper network systems. The course also introduces latest advances like the free-space optical networking and the optical burst networking. Graduate status in the School of Technology or graduate status in another school, with appropriate objectives and preparation. Permission of instructor required. Typically offered Fall Spring Summer.

### **ECET 55200 - Embedded System Design**

Credit Hours: 3.00. The course focuses on microcontroller hardware and software integration for embedded control applications. The architecture, programming, and interfacing of Microchip PIC16F88 microcontroller are studied. Interconnection of components, peripheral devices, C language programming, debugging, input/output techniques, and use of PC-based software development tools are studied. Prerequisite: C or C++ programming background is needed. Permission of instructor required. Typically offered Fall Spring Summer.

### **ECET 55300 - Robotic System Design**

Credit Hours: 3.00. An introduction to mathematical modeling, design, planning, and control of robotic systems. The course dwells from geometry, kinematics, statics, dynamics, and control theory. The content comprises of lectures, readings, and problem solving. It follows roughly the same sequence as the material presented in the text book, so it can be read in anticipation of the lectures. Permission of instructor required. Prerequisites: Mathematics course sequence required in BS in ECET or equivalent. Typically offered Fall Spring Summer.

### **ECET 55400 - Hybrid And Battery Technology**

Credit Hours: 3.00. This course will review different sources of energy and perform the comparison between these sources. Battery and storage technology, charging systems, and battery life cycle will be studied in detail. The storage

for solar thermal systems, solar photovoltaic systems, wind biomass and wave energy systems will be discussed and practical examples will be given. Hybrid Systems, the need for hybrid systems, range and type of hybrid systems will be discussed. Case studies of diesel-PV-battery, wind-PV-battery, gas-PV-battery, biomass-diesel-battery systems, gas-electrical and hybrid electric vehicles will be given. Permission of instructor required. Typically offered Fall Spring Summer.

### **ECET 55500 - System Reliability**

Credit Hours: 3.00. This course deals with the statistics and probability methods used in reliability engineering. The primary focus of the course is on the statistical methods used to estimate a product's reliability from product failure data and covariate information. The course also touches on the probability modeling methods that use knowledge of system architecture and system component reliability to calculate system reliability. Prerequisite: Graduate Standing in Engineering Technology or Engineering. Typically offered Fall Spring Summer.

### **ECET 55600 - Alternative Energy Technology**

Credit Hours: 3.00. This course is an introduction to various sources of energy and their process of extraction. Nonrenewable versus renewable energy sources and their harvesting technology will be studied. This will include wind, solar, fuel cells, biomass, geothermal, hydropower, and ocean energy. Most emphasis will be on renewable energy sources such as wind and solar, geothermal and oceanic energy technology and their harvesting systems. There will also be modeling simulation and analysis of wind and solar energy harvesting systems. Permission of instructor required. Typically offered Fall Spring Summer.

### **ECET 55700 - Advanced Printed Circuit Board Layout Design**

Credit Hours: 3.00. In this course, Advanced Printed Circuit Board (PCB) design and layout are studied. Topics include PCB substrates material, design methodology, through hole technology (THT), surface mount technology (SMT), mechanical design aspects, EMI, electrical characteristics, power systems, multilayer and stack up. Design for testability and manufacturability. Quality assurance in THT and SMT. The course also encompasses RF, high speed digital and mixed signal PCBs throughout the semester. Permission of instructor required. Typically offered Fall Spring Summer.

### **ECET 56100 - Wireless Networking**

**Prerequisite(s):** ECET 30300 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. An introduction to components, systems, and the enabling technology underlying the wireless networking. Topics include: basics of channel modeling, cellular telephony, coding, modulation techniques, antenna diversity, spread spectrum, ultra wideband, carrier hopping, mobile and multi-user access and location awareness technology. Wireless architectures, access, and design are the primary focus of the course, which includes architectures, fault and alarm handling, protection schemes and network management. Other topics include: paging, Wi-Fi, Wi-Max, CDMA, GSM, Bluetooth, ad hoc networking, and interfacing with wireless/copper network systems. Graduate status in the School of Technology or graduate status in another school, with appropriate objectives and preparation. Permission of instructor required. Typically offered Fall Spring Summer.

### **ECET 58110 - Workshop In Electrical And Computer Engineering Technology**

Credit Hours: 3.00. Advanced study of technical and professional topics. Emphasis is on new developments relating to technical, operational and training aspects of industry and technology education. May be offered classroom-based, online or hybrid or independent study. Permission of department required. Typically offered Fall Spring Summer.

### **ECET 59010 - Independent Study In Electrical And Computer Engineering Technology**

Credit Hours: 1.00 to 3.00. Independent study of a special problem under the guidance of a member of the staff. Does not substitute for either M.S. thesis or M.S. project credit. Prerequisite: Master's student standing. Permission of department required. Typically offered Fall Spring Summer.

## **Economics**

### **ECON 10100 - Survey Of Economics**

Credit Hours: 3.00. How economic forces such as globalization, technological change, and public policy impact the lives of individuals. Examines the roles, the market-place and the pursuit of self-interest play in the behavior of an economic system. Presents economic systems alternative to the market/capitalist one. Permission of department required. Typically offered Fall Spring Summer.

### **ECON 10200 - Introduction To The Study Of Economics**

Credit Hours: 3.00. This course will familiarize new students with Purdue University Northwest, its programs and people, and the basic tools needed to be successful in college. Focus will be on the individual development of students with regard to future professional employment and also his or her educational planning. Typically offered Fall Spring Summer.

### **ECON 21000 - Principles Of Economics**

Credit Hours: 3.00. Economics is the study of decision making under conditions of scarcity. This course looks at the behavior of the individual consumer and firm and their interaction with the government. The second half of the course

studies the macroeconomy and focuses on the causes of inflation, unemployment, and interest rate changes. The international economy also will be studied. No credit for management students. Typically offered Fall Spring Summer. CTL:ISH 1040 Introduction To Economics

### **ECON 21100 - Contemporary Economic Problems**

**Prerequisite(s):** ECON 21000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. The course assists students in analyzing current economic issues such as inflation, and unemployment, the energy crisis, environmental protection, poverty, and income distribution, urban blight, health care, and education. All students are required to give presentations and prepare papers on one of these topics. Typically offered Spring.

### **ECON 24000 - Personal Financial Management**

Credit Hours: 3.00. Lectures and case analysis of managing one's personal finances; including budgeting, credit analysis, insurance, taxation, housing, estate planning, private and business investment. Not available for credit in Management concentrations. Typically offered Fall Spring Summer.

### **ECON 25100 - Microeconomics**

**Prerequisite(s):** MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. The course develops a theoretical framework permitting an analysis of the forces affecting national income, employment, interest rates, and the rate of inflation. Emphasis is placed upon the role of government fiscal and monetary policy in achieving full employment and stable prices.

### **ECON 25200 - Macroeconomics**

**Prerequisite(s):** MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Introduction to macroeconomic theory. The course develops a theoretical framework permitting an analysis of the forces affecting national income, employment, interest rates, and the rate of inflation. Emphasis is placed upon the role of government fiscal and monetary policy in promoting economic growth and stable prices. Typically offered Fall Spring Summer. CTL:ISH 1041 Macroeconomics

### **ECON 30100 - Managerial Economics**

**Prerequisite(s):** ECON 25100 FOR LEVEL UG WITH MIN. GRADE OF C AND ECON 25200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A continuation of Econ 251. A more rigorous and practical treatment of microeconomic theory. Topics include: consumer behavior and demand, decision under uncertainty, production and cost, factor demand, market structure, general equilibrium and welfare. Emphasis on the tools used to analyze the behavior of individual economic units. Typically offered Summer Fall Spring.

### **ECON 30200 - Business Conditions Analysis**

**Prerequisite(s):** ECON 25100 FOR LEVEL UG WITH MIN. GRADE OF C AND ECON 25200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Continuation of Econ 252. A more rigorous and practical treatment of macroeconomic theory with emphasis on the conditions in which a business operates. Topics include: determinants of consumption, investment, net exports and foreign exchange rates, the level of unemployment, inflation and the long-run rate of economic growth. Typically offered Summer Fall Spring.

### **ECON 31100 - Environmental Economics**

**Prerequisite(s):** ECON 10100 FOR LEVEL UG WITH MIN. GRADE OF C OR ECON 25100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course provides an overview of environmental issues and legislation in the United States. Emphasis is placed on understanding and analyzing environmental problems applying basic principles of economics. This course explores the causes of environmental problems and evaluates the various policy instruments that are often used to address them at the international, national, state and local levels. Typically offered Fall Spring.

### **ECON 32200 - Public Finance**

**Prerequisite(s):** ECON 10100 FOR LEVEL UG WITH MIN. GRADE OF C OR ECON 25100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. The examination and analysis of public finance practices and problems in the federal fiscal system. Government activities that involve spending and taxation are analyzed applying basic principles of economics. Topics include public education, social security, healthcare, environment and tax systems. State and local government issues are also addressed. Typically offered Fall Spring.

### **ECON 35100 - Intermediate Microeconomics**

**Prerequisite(s):** ECON 25200 FOR LEVEL UG WITH MIN. GRADE OF C AND ECON 25100 FOR LEVEL UG WITH MIN. GRADE OF C AND MA 15910 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Theoretical treatment of consumer and producer behavior. Analysis of demand, production, cost, product and factor markets leading to general equilibrium and welfare implications. Emphasis is upon the development of skills necessary to analyze the behavior of individual economic agents. Typically offered Fall Spring.

### **ECON 35200 - Intermediate Macroeconomics**

**Prerequisite(s):** ECON 25100 FOR LEVEL UG WITH MIN. GRADE OF C AND ECON 25200 FOR LEVEL UG WITH MIN. GRADE OF C AND MA 15910 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. The determinants of consumption, investment, and the aggregate demand for assets. The joint determination of income, the price level, and the rate of interest. The role of government and elements of economic growth. Typically offered Fall Spring.

### **ECON 35300 - Business Cycles**

**Prerequisite(s):** ECON 25200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course provides an analysis of business fluctuation and the impact of government policy instruments. Special emphasis is placed on how macroeconomic factors influence managerial and personal decision making. Typically offered Fall Spring.

### **ECON 36000 - Econometrics**

**Prerequisite(s):** ECON 25100 FOR LEVEL UG WITH MIN. GRADE OF C AND ECON 25200 FOR LEVEL UG WITH MIN. GRADE OF C AND (BUSM 22500 FOR LEVEL UG WITH MIN. GRADE OF C OR STAT 30100 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 3.00. This course examines the statistical techniques used to analyze economic data, estimate casual effects, make predictions, and test economic theory. Students learn empirical skills used in analytical consulting, financial modeling, economic research, and by analysts in the private and public sectors. Emphasis is placed on estimating a single equation (e.g., demand function) and the problems associated with such estimation.

### **ECON 36500 - History Of Economic Thought**

**Prerequisite(s):** ECON 25100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. The course traces the development of theories of value and economic growth from the seventeenth century to Karl Marx. Among the authors studied are the mercantilists, Hume, Smith, Ricardo, and Marx. Excerpts from the original works are read and evaluated in light of modern theory. Typically offered Spring.

### **ECON 37500 - United States Economic History**

**Prerequisite(s):** ECON 25100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Application of economic analysis to illuminate such historical questions as the economic effects of British colonial administration, the rise of banking institutions, the financing of the railroads, the economics of slavery, the rise of big business, and the sources of government regulation of business. Typically offered Spring.

### **ECON 38000 - Money And Banking**

**Prerequisite(s):** ECON 25100 FOR LEVEL UG WITH MIN. GRADE OF C AND ECON 25200 FOR LEVEL UG WITH MIN. GRADE OF C AND MA 15910 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. The course analyzes the economics of money, monetary systems, investments, and financial intermediaries in modern industrial economies. Topics considered include the origin of money and the banking industry, financial asset markets, the role of central banks, and the effects of various monetary policies.

### **ECON 38500 - Labor Economics**

**Prerequisite(s):** ECON 25100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. The purpose of this course is to introduce important topics, theories, institutions, and policy issues relating to the functioning of labor markets. Topics to be considered include labor supply decisions, investments in human capital, compensating wage differentials, labor contract theory, unions, compensation programs, signaling in labor markets, the economics of unemployment, and government employment, retirement, and workplace safety. Typically offered Fall Spring.

### **ECON 39000 - Junior Level Problems In Economics**

Credit Hours: 1.00 to 4.00. Investigation into a specific topic area of economics. Permission of instructor required. Typically offered Fall Spring Summer.

### **ECON 40600 - Natural Resource And Environmental Economics**

Credit Hours: 3.00. An introduction to economic models of renewable and nonrenewable natural resources and the use of these models in the analysis of current resource use and environmental issues. Typically offered Summer Fall Spring.

### **ECON 41500 - Contemporary Economic Problems And Policies**

**Prerequisite(s):** ECON 25100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An application of the principles of economics developed in ECON 25100 and 25200 to contemporary controversies in public policy. Half of the semester is devoted to microeconomics issues and half to controversies in macroeconomics policy. Typically offered Spring.

### **ECON 41900 - Managerial Economics**

**Prerequisite(s):** ECON 25100 FOR LEVEL UG WITH MIN. GRADE OF C AND ECON 25200 FOR LEVEL UG WITH MIN. GRADE OF C AND (BUSM 22500 FOR LEVEL UG WITH MIN. GRADE OF C OR STAT 30100 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 3.00. A comprehensive treatment of economic theory and analysis applied to business decisions. Both qualitative techniques are applied to managerial decision-making situations. Emphasis is placed on applications of economic concepts and processes to practical situations.

### **ECON 42200 - Public Finance And Taxation**

**Prerequisite(s):** ECON 25100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course examines the role of government in market economies. The aim of the course is to provide an understanding of the reasons for government intervention in the economy and how individuals and firms respond to taxation and other government actions and how to evaluate the benefits of public programs. For example, what effects do taxes have on incentives to work, save, and invest? Emphasis is placed on current U.S. policy issues including Social Security, health care, education, environmental regulation, welfare programs, and tax reform. Typically offered Spring.

### **ECON 43400 - International Trade**

**Prerequisite(s):** ECON 25100 FOR LEVEL UG WITH MIN. GRADE OF C AND ECON 25200 FOR LEVEL UG WITH MIN. GRADE OF C AND MA 15910 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. The course is a study of the reasons, as well as the benefits and costs of international trade. The effects of trade policy (e.g., tariffs, trade agreements) are examined. Balance of payments, foreign exchange, and international macroeconomics linkages are also examined. Typically offered Fall Spring Summer.

### **ECON 45600 - Urban Economics**

Credit Hours: 3.00. Examines the market forces that lead to the development, growth, and size of cities. In addition, this course covers the theory of location and land use, principles of local public finance, policy problems in the areas of urban housing, transportation, crime, and pollution. Typically offered Spring.

### **ECON 46100 - Industrial Organization**

**Prerequisite(s):** ECON 25100 FOR LEVEL UG WITH MIN. GRADE OF C AND ECON 25200 FOR LEVEL UG WITH MIN. GRADE OF C AND MA 15910 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course examines the determinants of firm and market structure and the resulting market performance in imperfectly-competitive markets. Advanced topics include advertising, research and development, imperfectly competitive international markets, and market integration. Emphasis is placed on using theoretical models of firm and industry behavior to explain and analyze real-world examples of firm behavior. Typically offered Fall.

### **ECON 46200 - The Economics Of Health Care**

Credit Hours: 3.00. The course analyzes economic forces that shape the health care industry. Course content includes the market structure of the health care industry, public and private health care delivery systems, reimbursement methods for services, and the labor market for health care workers. Typically offered Fall Spring.

### **ECON 46500 - Economic Forecasting Techniques**

**Prerequisite(s):** ECON 25100 FOR LEVEL UG WITH MIN. GRADE OF C AND ECON 25200 FOR LEVEL UG WITH MIN. GRADE OF C AND (BUSM 22500 FOR LEVEL UG WITH MIN. GRADE OF C OR STAT 30100 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 3.00. A course examining the statistical techniques of forecasting. Emphasis is placed on economic time series data and computer based methods of estimating and testing.

### **ECON 46700 - Economics And The Law**

**Prerequisite(s):** ECON 25100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course is a study of the economic consequences of law. The focus is on the impact of laws on the efficient use of resources in a society. The relevant microeconomic theory underlying social decision making will



be examined. The economic foundations of property rights and contract law will be examined, including issues of risk allocation and liability associated with tort law. Typically offered Fall Spring.

### **ECON 49000 - Problems In Economics**

Credit Hours: 1.00 to 4.00. Arrange with instructor before enrolling. Supervised reading and reports in various subjects. Open only to a limited number of seniors with superior records in previous courses. Permission of instructor required. Typically offered Fall Spring Summer.

### **ECON 49800 - Undergraduate Research In Economics**

Credit Hours: 3.00. Conduct, report and disseminate original research on topics and issues in economic-related fields. Junior standing and at least nine (9) credit hours in ECON courses 30000 level or above with a min. grade of C or better required prior to taking this course. Typically offered Fall Spring Summer.

### **ECON 51110 - Foundations Of Economics And Finance**

Credit Hours: 1.00 to 3.00. This course provides an introductory examination of the elements of economics and finance routinely utilized for managerial decision making. An overview of the micro/macro economy is presented, focusing on supply and demand, production costs and market structures, role of the government, Federal Reserve, and fiscal and monetary policy in the economy. The course also covers general financial decision making as relates to time value, capital budgeting, cost of capital and capital structure, and working capital management. Typically offered Fall Spring Summer.

### **ECON 51300 - Economic Theory**

Credit Hours: 3.00 or 4.00 (West Lafayette, Calumet) 3.00 (North Central) Theoretical analysis of a market economy with an emphasis on decision processes of managers. Consideration is given to micro aspects of price determination, utilization of resources and market organization, and to aggregative concepts of national income and employment. Typically offered Spring Fall.

### **ECON 51500 - Macroeconomics**

Credit Hours: 2.00 or 3.00. Investigation of the causes of macroeconomic fluctuations in the economy. Looks at changes in inflation, unemployment, real output, interest rates, and exchange rates, and explores why they occur, what their effects are, and what, if any, role government should play in dealing with these problems. A mixture of theory and case studies with reference to historical case studies. Current macroeconomic problems will be discussed with a focus on the international aspects of macroeconomic problems. Typically offered Fall Spring.

### **ECON 53400 - International Trade Theory**

**Prerequisite(s):** ECON 25200 FOR LEVEL UG WITH MIN. GRADE OF B

Credit Hours: 2.00 or 3.00. Problems of the international economy addressed in the light of economic theory. Emphasis is on real, as opposed to monetary, topics. Topics may include trade barriers, multinational corporations, technology transfer, the European economic community, economic constraints on the sovereignty of nation-states. Typically offered Fall.

### **ECON 55100 - Competitive Advantage Of A Region**

Credit Hours: 3.00. This course applies the theory of competitive advantage, advanced by Michael Porter (The Competitive Advantage of Nations) to a region. Examines factors associated with superior economic growth relative to peer regions. One focus of the course is Northern Indiana and factors of potential competitive advantage, including multiple carriers for intercontinental rail service, proximity to major manufacturing, and strength in support services important to new product development. Students will analyze economic growth of an Indiana county and compare this to peer counties, and use principles of comparative advantage to understand resultant outcome difference in growth performance. Typically offered Fall Spring Summer.

### **ECON 55200 - Introduction To Economic Development**

Credit Hours: 3.00. This course provides an introduction to the economic development process carried out by local governments, chambers of commerce, not-for-profit organizations and utility companies. It examines economic development organization structure, community-based economic development programs, relationships between chambers of commerce and government and others in delivering programs that expand jobs and investment in existing businesses and attract new business. There is an emphasis on the roles of professional staff, community volunteer representatives and team work in the conduct of community economic development programs. Interpretation of economic and statistical data and in working within community-based economic development teams is covered. Typically offered Fall Spring Summer.

### **ECON 55300 - Economic And Social Analysis**

Credit Hours: 3.00. This course covers: (1) regional growth, development, and change; (2) input-output analysis; (3) benefit/cost analysis; (4) social issues and change; and (5) creating a regional strategy. Topic (1) provides an overview of the recent literature of regional growth and development. Topic (2) provides students with hands-on experience in using the IMPLAN economic model for a county or region of their choice. The model is particularly useful in evaluating the economic impacts (direct, indirect, and induced) of new developments on a region. Topic (3) provides students with techniques to evaluate the economic benefits and costs of proposed initiatives. Topic (4) introduces students to an analysis of social issues that have implications for and interactions with the practice of economic

development. Topic (5) is directed at developing an integrated economic development strategy. Typically offered Fall Spring Summer.

### **ECON 59000 - Problems In Economics**

Credit Hours: 1.00 to 4.00. Open only to a limited number of seniors and graduate students. Arrange with instructor before enrolling. Supervised reading and reports in various subjects. Permission of instructor required. Typically offered Fall Spring Summer.

## **Education Curriculum and Instruction**

### **EDCI 10500 - Introduction To Teaching**

Credit Hours: 1.00. This course serves as an introduction for Education majors to the field of education. Typically offered Fall Spring Summer.

### **EDCI 12000 - Technology In Society: Online Communication And Publishing**

Credit Hours: 1.00. Students will learn the importance of writing professionally and academically in an online setting through the exploration of blog tools, including WordPress, one of the world's most popular blogging tools today. Permission of department required. Typically offered Fall Spring Summer.

### **EDCI 13000 - Technology In Society: Digital Media And Learning**

Credit Hours: 1.00. Students will learn the importance of audio and video sharing mechanisms that exist on the Web, and how to use them appropriately. They will explore issues related to presenting themselves professionally and adhering to copyright and other legal considerations. Permission of department required. Typically offered Fall Spring Summer.

### **EDCI 14000 - Technology In Society: Web Tools And Social Networking**

Credit Hours: 1.00. Students will learn importance of presenting themselves professionally in online social spaces, which are popular and commonly used today. Such spaces include Facebook, Twitter, LinkedIn, YouTube and Google Plus. Permission of department required. Typically offered Fall Spring Summer.

### **EDCI 20500 - Exploring Teaching As A Career**

Credit Hours: 3.00. Students will become familiar with the work of teachers and begin to develop their educational philosophies through examining what it means to teach and to learn and the nature and purpose of schools. Students will critically evaluate teaching as their chosen profession. This course includes a required weekly field-based experience in an elementary, middle, or high school classroom. Typically offered Fall Spring.

### **EDCI 20600 - Introduction To Teaching**

Credit Hours: 3.00. Students will analyze the work of professional educators and begin to develop their own educational philosophies through examining the nature of teaching and learning in American schools. Students will critically evaluate the profession and practice of teaching with focus on current trends in K-12 education. Students will become familiar with teacher preparation requirements at the national, state, and college levels. Typically offered Summer Fall Spring.

### **EDCI 21200 - Introduction To Early Education**

**Prerequisite(s):** EDPS 22000 FOR LEVEL UG WITH MIN. GRADE OF C- AND EDCI 32300 FOR LEVEL UG WITH MIN. GRADE OF C- AND PR1 FOR MIN. SCORE OF 176 AND PR2 FOR MIN. SCORE OF 172 AND PR3 FOR MIN. SCORE OF 175

Credit Hours: 3.00. Reviews history and philosophy of kindergartens and other programs for young children. Classroom organization and management alternatives are analyzed. Emphasis is placed on meeting individual needs of young children through group and individual activities. Typically offered Fall Spring Summer.

### **EDCI 23000 - Academic Language in Education**

### **EDCI 23500 - Indiana History, Geography, and Economics for Educators**

Credit Hours: 3.00. Major developments and significant events and perspectives in Indiana history are introduced. Emphasis is on major concepts and skills related to Indiana history, geography and economics. Typically offered Fall Spring Summer.

### **EDCI 26000 - Introduction To Computers In Education**

**Prerequisite(s):** CIS 20400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An introductory course covering instructional uses of microcomputers; the selection, evaluation, and management of hardware and software; and curricular applications for microcomputers. Typically offered Fall Spring Summer.

### **EDCI 27000 - Introduction To Educational Technology And Computing**

**Prerequisite(s):** (MA 13000 FOR LEVEL UG WITH MIN. GRADE OF C OR MA 13700 FOR LEVEL UG WITH MIN. GRADE OF C) AND (BIOL 20500 FOR LEVEL UG WITH MIN. GRADE OF D OR BIOL 14300 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 3.00. Addresses fundamentals of educational technology, including the integration of instructional design, media, computers and related technologies within the classroom setting. Typically offered Fall Spring Summer.

### **EDCI 27100 - Classroom Applications Of Educational Technology**

**Prerequisite(s):** EDCI 27000 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 1.00. Explores classroom applications of educational technology in K-12 settings. The students will achieve a greater understanding of issues and techniques related to technology integration. Typically offered Fall Spring Summer.

### **EDCI 27200 - Integrating Technology In The Classroom**

**Prerequisite(s):** EDCI 28600 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) AND EDCI 20500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. EDCI 27200 explores class room applications of educational technology. Teacher candidates will examine the integration of educational technology in classroom settings through field experiences, web-based resources, video case studies, and in-class discussions. The goal of the course is to help teacher candidates achieve a greater understanding of issues and techniques related to the integration of education technology in K-12 educational settings. Typically offered Fall Spring Summer.

### **EDCI 27600 - Child, Family, School And Community Partnerships**

Credit Hours: 3.00. Examines the life of the young child within the context of family, community, and cultural systems. Explores the issues and characteristics of diversity within families and communities. Students develop strategies for fostering positive family/teacher/provider-child relationships. Students will gain exposure to community early childhood resources through a service learning component. Typically offered Summer Fall Spring.

### **EDCI 28500 - Multiculturalism And Education**

Credit Hours: 3.00. This course integrates an understanding of multiculturalism with principles of democratic education. Historical, sociological, cultural, political, philosophical, and pedagogical foundations of multiculturalism are explored and related to issues of pedagogy in a pluralistic society. Typically offered Fall Spring Summer.

### **EDCI 28600 - Multiculturalism In Secondary Schools**

**Prerequisite(s):** EDCI 20500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This is an introductory course of multiculturalism with principles of democratic education and social justice at the secondary level. A variety of theorists and perspectives on issues pertaining to multicultural education are discussed. Class activities and assigned readings focus on the examination of sociopolitical, cultural, and economic conditions that influence teaching and learning in secondary schools. Typically offered Fall Spring Summer.

### **EDCI 30001 - Lifelong Health And Wellness For Teachers And Children**

**Prerequisite(s):** EDCI 35500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course includes topics important to personal health, wellness, and disease prevention for adults and children. Students will learn about health and wellness, and how to incorporate healthy habits into their daily lives. In addition, the health and safety of children will be covered. This course concludes by considering ways in which elementary schools can provide opportunities to promote student health. Typically offered Fall Spring.

### **EDCI 30400 - Literacy And Middle Childhood**

**Prerequisite(s):** EDCI 32100 FOR LEVEL UG WITH MIN. GRADE OF C- AND EDPS 37000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 4.00. Explores aspects of child development and its relevance to literacy, including early and middle childhood developmental influences. This course examines methods and materials appropriate for grades 3-6. Topics will include the instruction and assessment of students. Typically offered Fall Spring Summer.

### **EDCI 30700 - Corrective Reading For The Classroom Teacher**

Credit Hours: 3.00. Classroom procedures for the identification of reading difficulties; selection and application of appropriate methods and materials to provide corrective treatment. Emphasizes approaches to discovering and diagnosing reading; techniques for selecting materials in planning a remedial program, methods for teaching specific skills and techniques for evaluating progress. Appropriate laboratory and field experiences are provided. Typically offered Fall Spring Summer.

### **EDCI 30800 - Practicum In Reading For The Classroom Teacher**

**Prerequisite(s):** EDCI 30700 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. For prospective teachers in elementary or secondary schools who desire advanced supervised practice in teaching reading to pupils experiencing reading difficulty. It is required for a minor in reading. The seminar will evaluate diagnostic and tutoring strategies, methods, materials, and achievement. No undergraduate students may

be enrolled in any of these undergraduate courses until they have been admitted to teacher education. Typically offered Fall Spring Summer.

### **EDCI 30900 - Reading In Middle And Secondary Schools: Methods And Problems**

Credit Hours: 3.00. For prospective teachers at junior and senior high schools. An overview of reading processes, fundamentals of reading instruction, factors that influence the ability to read text materials, strategies and materials for identifying and reducing reading problems, school resources, and programs for normal and deficient readers. Concurrent enrollment with program-specified methods course. Typically offered Fall Spring.

### **EDCI 31000 - Literacy And The Young Child**

Credit Hours: 3.00. A content course designed to provide the background knowledge needed to guide the literacy development of children aged 3-8. The course examines young children's emergent use and understanding of literacy in the home and in early schooling. The course traces the connections between the developmental history of children's literacy and classroom practice. Typically offered Summer Fall Spring.

### **EDCI 31100 - Media For Children**

Credit Hours: 3.00. Books, films, digital media, and other resources provided in elementary media centers are studied and evaluated to meet the personal and educational needs of students in elementary schools. Emphasis is on wide reading of children's books and viewing of media and their use with children. Permission of the school/program required. Typically offered Fall Spring Summer.

### **EDCI 31200 - The Early Education Program: Cognitive Areas**

**Prerequisite(s):** EDCI 21200

Credit Hours: 3.00. Presentation of various techniques for beginning academic learning through language arts, social studies, math, science, and the arts for preschool and kindergarten. Typically offered Fall Spring Summer.

### **EDCI 31300 - The Early Education Program: Social And Emotional Areas**

Credit Hours: 3.00. Reviews the building of socialization skills. Emphasis is on dealing with feelings, expressing emotions, developing attitudes and self-concept. Explores parent-teacher cooperation. Typically offered Fall Spring Summer.

### **EDCI 31500 - Teaching Mathematics In The Elementary School**

**Prerequisite(s):** EDCI 30400 FOR LEVEL UG WITH MIN. GRADE OF C- AND EDCI 31600 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 13700 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 13800 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 13900 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 4.00. Materials and methods used in teaching mathematics at various grade levels in the elementary school. Typically offered Fall Spring.

### **EDCI 31600 - Teaching Social Studies In The Elementary School**

**Prerequisite(s):** EDCI 32100 FOR LEVEL UG WITH MIN. GRADE OF C- AND EDPS 37000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 4.00. Provides experiences in developing skills for teaching social studies as well as understanding of appropriate subject matter, including evaluation techniques and procedures. Typically offered Summer Fall Spring.

### **EDCI 31700 - Teaching Science In The Elementary School**

**Prerequisite(s):** EDCI 30400 FOR LEVEL UG WITH MIN. GRADE OF C- AND EDCI 31600 FOR LEVEL UG WITH MIN. GRADE OF C- AND SCI 31500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 4.00. Provides experiences in developing skills for teaching science as well as the understanding of appropriate subject matter: includes evaluation techniques and procedures. Typically offered Fall Spring.

### **EDCI 32000 - Principles Of Practice In Elementary And Secondary Schools**

**Prerequisite(s):** EDCI 32300 FOR LEVEL UG WITH MIN. GRADE OF C- AND EDCI 35500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course provides the pre-service teacher with classroom management principles and strategies for the elementary or secondary school classroom. This course will also highlight the teacher's role in the community and the community's role in the educational process. Because the nature of the classroom management differs substantially across developmental levels, separate course sections will be offered for elementary and middle/secondary students. Typically offered Fall Spring Summer.

### **EDCI 32100 - Literacy And The Young Child**

**Prerequisite(s):** EDCI 35500 FOR LEVEL UG WITH MIN. GRADE OF C- AND 001 FOR MIN. SCORE OF 220 AND 002 FOR MIN. SCORE OF 220 AND 003 FOR MIN. SCORE OF 220

Credit Hours: 4.00. Explores aspects of child development and its relevance to literacy, including early and middle

childhood developmental influences. This course examines methods and materials appropriate for grades 3-6. Topics will include the instruction and assessment of students. Typically offered Fall Spring Summer.

### **EDCI 32200 - English For New Language Learners**

Credit Hours: 3.00. This is a teacher education course that focuses on English as a New Language (ENL) key terms, issues, curriculum development, and instruction for students (PreK-12) in a variety of language and program settings. The course will emphasize language acquisition and the practice of integrating language and content instruction for students with English as a New Language. Typically offered Fall Spring.

### **EDCI 32300 - Educational Technology For Teaching And Learning**

Credit Hours: 3.00. Explores classroom applications of educational technology in K-12 settings and addresses methods for effectively integrating technology into the teaching and learning process. Knowledge in this area can be gained through an understanding of the social stimulants to technological developments and their effects on society. Students will learn about technology-based instructional resources and the pedagogical processes they can facilitate. Typically offered Fall Spring Summer.

### **EDCI 32700 - Social Studies Junior High/Middle School**

**Prerequisite(s):** EDPS 26000 FOR LEVEL UG WITH MIN. GRADE OF C AND EDCI 32000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Acquaints students with developmentally appropriate content, materials, methods and literature relating to the social studies field generally and the intense teaching areas particularly. Includes an overview of the role of the middle school social studies teacher today, junior high/ middle school philosophy, use of technology, and planning of instructional units. Field experiences are integrated with classroom instruction. Typically offered Fall Spring.

### **EDCI 33100 - English Teach Junior High/Middle School**

**Prerequisite(s):** EDPS 26000 AND EDCI 32000

Credit Hours: 3.00. Acquaints students with developmentally appropriate content methods and materials for teaching English in Junior High/ Middle schools, includes an overview of the role of the Middle School teacher today, Junior High/Middle School philosophy, use of technology, and planning of instructional units. Field experiences are integrated with classroom instruction. Typically offered Fall Spring.

### **EDCI 33200 - Foreign Language Junior/Middle School**

**Prerequisite(s):** EDPS 26000 FOR LEVEL UG WITH MIN. GRADE OF C AND EDCI 32000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Acquaints students with developmentally appropriate content methods and materials for teaching foreign language both as a language experience and as a cultural experience. Comparative studies of various language teaching methods, analysis of current foreign language textbooks and accompanying materials, use of technology, and planning of instructional units are included. Field experiences are integrated with classroom instruction. Typically offered Fall Spring.

### **EDCI 33400 - Mathematics Instruction Junior/Middle School**

**Prerequisite(s):** EDPS 26000 FOR LEVEL UG WITH MIN. GRADE OF C- AND EDCI 32000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Acquaints students with developmentally appropriate content materials and methods in teaching mathematics in the junior high/middle school. Includes an overview of the role of the middle school Mathematics teacher today, junior high/middle school philosophy, use of technology, and planning of instructional units. Field experiences are integrated with classroom instruction. . Typically offered Fall Spring.

### **EDCI 33600 - Science Instruction Junior/Middle School**

**Prerequisite(s):** EDPS 26000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Acquaints students with developmentally appropriate content materials and methods in teaching science in the junior high/middle school (include Life and Physical Science). Includes an overview of the role of the middle school science teacher today, junior high middle school philosophy, and planning of instructional units. Field experiences are integrated with classroom instruction. . Typically offered Fall Spring.

### **EDCI 34100 - English Teaching In Senior High, Junior High And Middle Schools**

**Prerequisite(s):** EDPS 26000 FOR LEVEL UG WITH MIN. GRADE OF C- AND EDCI 35500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Acquaints students with developmentally appropriate content, methods, and materials for teaching high school, junior high and middle school English. Includes an overview of the role of the high school, junior high, and middle school English teacher today, the high school, junior high, and middle school philosophy, the use of

technology, and planning of instructional units. Field experiences are integrated with classroom instruction. Typically offered Fall Spring.

### **EDCI 34200 - Strategies Of Foreign Language Instruction In Senior High, Junior High And Middle Schools**

**Prerequisite(s):** EDCI 35500 FOR LEVEL UG WITH MIN. GRADE OF C- AND EDPS 26000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Acquaints students with developmentally appropriate content, methods, and materials for teaching high school, junior high, and middle school foreign language and culture. Comparative studies of various teaching methods, analysis of current foreign language textbooks and accompanying materials, use of technology, and planning of instructional units are included. Field experiences are integrated with classroom instruction. Typically offered Fall.

### **EDCI 34400 - Strategies Of Mathematics Instruction In Senior High, Junior High And Middle Schools**

**Prerequisite(s):** EDPS 26000 FOR LEVEL UG WITH MIN. GRADE OF C- AND EDCI 35500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Acquaints students with developmentally appropriate content, materials, and methods for teaching mathematics in the high school, junior high and middle school. Includes an overview of the role of the high school, junior high and middle school math teacher today, the high school, junior high and middle school philosophy, use of technology, and planning of instructional units are included. Field experiences are integrated with classroom instruction. Typically offered Fall Spring.

### **EDCI 34600 - Strategies Of Science Instruction In Senior High, Junior High And Middle Schools**

**Prerequisite(s):** EDPS 26000 FOR LEVEL UG WITH MIN. GRADE OF C- AND EDCI 35500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Acquaints students with developmentally appropriate content, materials, and methods in teaching science in the high school, junior high and middle school (includes life and physical sciences). Includes an overview of the role of the high school, junior high and middle school science teacher today, the high school, junior high and middle school philosophy, use of technology, and planning of instructional units. Field experiences are integrated with classroom instruction. Typically offered Fall Spring.

### **EDCI 34700 - Strategies Of Social Studies Instruction In Senior High, Junior High And Middle Schools**

**Prerequisite(s):** EDPS 26000 FOR LEVEL UG WITH MIN. GRADE OF C- AND EDCI 35500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Acquaints students with developmentally appropriate content, materials, methods and literature relating to the social studies field generally and the intense teaching areas particularly. Includes an overview of the role of the high school, junior high and middle school social teacher today, the high school, junior high and middle school philosophy, use of technology, and planning of instructional units. Field experiences are integrated with classroom instruction. Typically offered Fall Spring.

### **EDCI 35500 - Teaching And Learning K-12 Classroom**

**Prerequisite(s):** EDFA 20000 FOR LEVEL UG WITH MIN. GRADE OF C- AND EDPS 26000 FOR LEVEL UG WITH MIN. GRADE OF C- AND EDPS 22000 FOR LEVEL UG WITH MIN. GRADE OF C- AND 001 FOR MIN. SCORE OF 220 AND 002 FOR MIN. SCORE OF 220 AND 003 FOR MIN. SCORE OF 220

Credit Hours: 3.00. Acquaints students with general methods of promoting the learning process in the K-12 secondary school. Topics studied will include long-term and short-term instructional planning and evaluation; classroom organization including management, motivation of students, the use of media to promote instructional objectives; and individual and group learning procedures. Students will also study how curriculum goals are adapted and implemented in the secondary classroom. Typically offered Fall Spring Summer.

### **EDCI 35501 - Teaching and Learning K-12 Classroom**

**Prerequisite(s):** EDFA 20000 FOR LEVEL UG WITH MIN. GRADE OF C- AND EDPS 26000 FOR LEVEL UG WITH MIN. GRADE OF C- AND EDPS 22000 FOR LEVEL UG WITH MIN. GRADE OF C- AND PR1 FOR MIN. SCORE OF 176 AND PR2 FOR MIN. SCORE OF 172 AND PR3 FOR MIN. SCORE OF 175

Credit Hours: 3.00. Acquaints students with general methods of promoting the learning process in the K-12 secondary school. Topics studied will include long-term and short-term instructional planning and evaluation; classroom organization including management, motivation of students, the use of media to promote instructional objectives; and

individual and group learning procedures. Students will also study how curriculum goals are adapted and implemented in the secondary classroom. Typically offered Fall Spring Summer.

### **EDCI 36100 - Social Studies In The Elementary School**

**Prerequisite(s):** EDPS 23500 FOR LEVEL UG WITH MIN. GRADE OF C AND EDPS 26500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Provides students with an overview of the field of social studies, of selected issues in the field, and of best practice strategies for teaching social studies to elementary school children. Encourages participants to reflect on social studies knowledge, skills and dispositions, how students learn these most effectively, and how best to teach social studies. Includes a field-based experiential component. No undergraduate students may be enrolled in any of these undergraduate courses until they have been admitted to teacher education. Typically offered Summer Fall Spring.

### **EDCI 36201 - Literacy Instruction In K-3 Classrooms**

**Prerequisite(s):** EDPS 23500 FOR LEVEL UG WITH MIN. GRADE OF D- AND EDPS 26500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Candidates will learn about theories of language and literacy development as related to the research and practice of a balanced approach to literacy instruction in the primary grades, K-3. Typically offered Fall Spring.

### **EDCI 36202 - Literacy Instruction In 4-6 Classrooms**

**Prerequisite(s):** EDCI 20500 FOR LEVEL UG WITH MIN. GRADE OF D- AND EDCI 28500 FOR LEVEL UG WITH MIN. GRADE OF D- AND EDPS 23500 FOR LEVEL UG WITH MIN. GRADE OF D- AND EDPS 26500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Elementary Teacher Education Candidates will learn about theories of literacy as they relate to the content areas they will teach, emphasizing a reading to learn approach through inquiry-based instruction in the intermediate grades, 4-6. Typically offered Fall Spring.

### **EDCI 36203 - Literacy Instruction in K-3 Classrooms**

**Prerequisite(s):** EDPS 23500 FOR LEVEL UG WITH MIN. GRADE OF D- AND EDPS 26500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Candidates will learn about theories of language and literacy development as related to the research and practice of a balanced approach to literacy instruction in the primary grades, K-3. Typically offered Fall Spring.

### **EDCI 36204 - Literacy Instruction in 4-6 Classrooms**

**Prerequisite(s):** EDCI 20500 FOR LEVEL UG WITH MIN. GRADE OF D- AND EDCI 28500 FOR LEVEL UG WITH MIN. GRADE OF D- AND EDPS 23500 FOR LEVEL UG WITH MIN. GRADE OF D- AND EDPS 26500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Elementary Teacher Education Candidates will learn about theories of literacy as they relate to the content areas they will teach, emphasizing a reading to learn approach through inquiry-based instruction in the intermediate grades, 4-6. Typically offered Fall Spring.

### **EDCI 36300 - Literacy In The Elementary School II**

**Prerequisite(s):** EDCI 36100 FOR LEVEL UG WITH MIN. GRADE OF C AND EDCI 36201 FOR LEVEL UG WITH MIN. GRADE OF C AND EDCI 36202 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Focuses on teaching children who experience difficulty acquiring literacy. Assessments of children's strengths and needs are used to plan and evaluate instruction. Strategies for helping children develop more mature literacy understandings are applied in weekly small-group instructional sessions. Includes a field-based experiential component. Taken concurrently with EDPS 43000. Typically offered Fall Spring.

### **EDCI 36400 - Mathematics In The Elementary School**

**Prerequisite(s):** EDCI 36100 FOR LEVEL UG WITH MIN. GRADE OF C AND EDCI 36201 FOR LEVEL UG WITH MIN. GRADE OF C AND EDCI 36202 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Focuses on teaching mathematics in the elementary school. Students learn what it means to teach mathematics when reasoning, problem solving, communication, and connections are the foci. Includes a field-based experiential component. Typically offered Fall Spring.

### **EDCI 36500 - Science In The Elementary School**

**Prerequisite(s):** EDCI 36100 FOR LEVEL UG WITH MIN. GRADE OF C AND EDCI 36201 FOR LEVEL UG WITH MIN. GRADE OF C AND EDCI 36202 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Investigates ways children learn science as a basis for planning, enacting, and assessing science curriculum and instruction. State and national standards, teaching cases, and science lab experiences are used as tools

for reflecting on practice. Includes a field-based experiential component. Taken concurrently with EDCI 36400 and EDCI 37000. Typically offered Fall Spring.

### **EDCI 36600 - Use Of Assessment In The K-12 Classroom**

Credit Hours: 3.00. This course will acquaint students with standardized tests currently in use in K-12 settings such as ISTEP and interpretation of test data to inform planning and instruction. In addition this course will address use of standardized tests to identify and develop education programming for students with special needs. Typically offered Summer Fall Spring.

### **EDCI 36800 - Literacy Intervention Strategies for Diverse Learners**

### **EDCI 37100 - Integrated Curriculum In Early Childhood: Creative And Affective Domains**

**Prerequisite(s):** EDPS 23600 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. This course will present methods focusing on teaching and learning, curriculum, and assessment in the areas of art, play, physical education/movement, music, drama, and social-emotional development. Focus will be on the integrative nature of the early childhood classroom addressing social-emotional development, creativity, and the learning environment. Students are required to complete a field study in a diverse early childhood setting. Typically offered Fall Spring.

### **EDCI 37101 - Integrated Curriculum in Early Childhood: Creative and Affective Domains**

**Prerequisite(s):** EDPS 23600 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. This course will present methods focusing on teaching and learning, curriculum, and assessment in the areas of art, play, physical education/movement, music, drama, and social-emotional development. Focus will be on the integrative nature of the early childhood classroom addressing social-emotional development, creativity, and the learning environment. Students are required to complete a field study in a diverse early childhood setting. Typically offered Fall Spring.

### **EDCI 37200 - Integrated Curriculum In Early Childhood: Cognitive Domains**

**Prerequisite(s):** EDPS 23600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course explores methods focused on teaching and learning, curriculum, and assessment in the areas of mathematics, science, social studies, health, and nutrition. Examines developmentally appropriate practices, strategies for meeting the needs of diverse learners' cognitive development, including the role of the "more competent other" in facilitating experiential learning. A field experience in an early childhood setting is required. Typically offered Fall Spring.

### **EDCI 37201 - Integrated Curriculum in Early Childhood: Cognitive Domains**

**Prerequisite(s):** EDPS 23600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course explores methods focused on teaching and learning, curriculum, and assessment in the areas of mathematics, science, social studies, health, and nutrition. Examines developmentally appropriate practices, strategies for meeting the needs of diverse learners' cognitive development, including the role of the "more competent other" in facilitating experiential learning. A field experience in an early childhood setting is required. Typically offered Fall Spring.

### **EDCI 37300 - Expressive Arts/Social Studies In Kindergarten And Primary Grades**

**Prerequisite(s):** EDPS 27700 FOR LEVEL UG WITH MIN. GRADE OF D- AND EDCI 37400 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. Explores the concepts and modes of inquiry from the social studies including history, geography, social sciences and related areas to foster kindergarten and primary children's understanding. Focus on the integration of curriculum including the arts as a means of communication and inquiry. Examines methods and materials for presenting the content. Typically offered Summer Fall Spring.

### **EDCI 37301 - Expressive Arts/Social Studies in Kindergarten and Primary Grades**

**Prerequisite(s):** EDPS 27700 FOR LEVEL UG WITH MIN. GRADE OF D- AND EDCI 37401 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. Explores the concepts and modes of inquiry from the social studies including history, geography, social sciences and related areas to foster kindergarten and primary children's understanding. Focus on the integration of curriculum including the arts as a means of communication and inquiry. Examines methods and materials for presenting the content. Typically offered Summer Fall Spring.

### **EDCI 37400 - Science And Math In Kindergarten And Primary Grades**



**Prerequisite(s):** EDPS 27700 FOR LEVEL UG WITH MIN. GRADE OF D- AND EDCI 37300 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. Explores methods and materials for inquiry in the content areas of science including physical, life, earth and space. Explores methods and materials for fostering conceptual development in the areas of mathematics including number, geometry, measurement, statistics and probability, and algebraic reasoning. Focus on the process of inquiry and problem-solving to construct knowledge. Typically offered Summer Fall Spring.

### **EDCI 37401 - Science and Math in Kindergarten and Primary Grades**

**Prerequisite(s):** EDPS 27700 FOR LEVEL UG WITH MIN. GRADE OF D- AND EDCI 37301 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. Explores methods and materials for inquiry in the content areas of science including physical, life, earth and space. Explores methods and materials for fostering conceptual development in the areas of mathematics including number, geometry, measurement, statistics and probability, and algebraic reasoning. Focus on the process of inquiry and problem-solving to construct knowledge. Typically offered Summer Fall Spring.

### **EDCI 37500 - Music And Movement For The Young Child**

**Prerequisite(s):** EDPS 23600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Explores the use of the fine arts in primary classroom settings, including physical movement and activity, dramatics, dance as well as rhythms, instruments, singing and listening to music. Emphasis on the integration of music and movement within the early childhood and elementary/primary curriculum.. Typically offered Summer Fall Spring.

### **EDCI 40200 - Teaching Kindergarten: Issues And Methods**

**Prerequisite(s):** EDCI 20500 FOR LEVEL UG WITH MIN. GRADE OF C AND EDCI 31000 FOR LEVEL UG WITH MIN. GRADE OF C AND EDPS 23500 FOR LEVEL UG WITH MIN. GRADE OF C AND PSY 23500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Examination of developmentally appropriate kindergarten curricula, current issues, and practices. The course addresses not only the activities and procedures of a kindergarten classroom, but also the connections between children's development and the design of developmentally appropriate, integrated curricula. Typically offered Summer Fall Spring.

### **EDCI 40800 - Advanced Literacy Instruction**

Credit Hours: 3.00. This course will be offered for elementary education candidates pursuing the addition of Reading to the teaching license. Students will further their understanding of the role of assessment and the implementation of appropriate instructional strategies in student (K-6) literacy learning. Issues related to diversity will be highlighted. A field experience in a diverse setting will be required. Typically offered Summer Fall Spring.

### **EDCI 40900 - Student Teaching Seminar In Literacy**

Credit Hours: 1.00. During student teaching, education candidates will provide evidence of their impact on K-6 student learning, and demonstrate that they are able to create a learning environment that fosters an interest and growth in all aspects of literacy. They will engage in reflective practice and will communicate and interact with families, professional colleagues, and the community to support the K-6 students' learning and well being.. Typically offered Summer Fall Spring.

### **EDCI 42500 - Teaching Of Mathematics In Secondary Schools**

Credit Hours: 2.00 or 3.00. This course is designed for students who are planning to be secondary mathematics teachers in the twenty-first century. The course content is organized around tools and tasks for teaching secondary mathematics content, theories of teaching and learning mathematics, and organizing for classroom instruction. Must have completed at least 18 credit hours of Mathematics previous to this course. No undergraduate students may be enrolled in any of these undergraduate courses until they have been admitted to teacher education. Typically offered Fall Spring.

### **EDCI 46500 - Assessment In The Elementary School**

Credit Hours: 3.00. This course will introduce teacher candidates to both formative and summative assessments, emphasizing a variety of standardized tests currently used in K-6 settings. Candidates will learn how to interpret test data to inform their planning and instruction, and help them determine the effectiveness of their instruction. This course also requires students to understand how to create effective assessments and understand purposes for their use. Typically offered Fall Spring.

### **EDCI 46600 - Integrated Curriculum In The Elementary School**

Credit Hours: 2.00. This course introduces various approaches to integrated curriculum, including historical foundations and current conceptual frameworks. Students develop integrated curriculum units (with relevant goals, materials, activities and plans) suitable for particular teaching contexts. The course includes a field-based component and is taken concurrently with EDPS 43000. No undergraduate students may be enrolled in any of these undergraduate courses until they have been admitted to teacher education. Typically offered Fall Spring.

### **EDCI 47000 - Practicum And Seminar In Early Childhood Programs**

**Prerequisite(s):** EDPS 23600 FOR LEVEL UG WITH MIN. GRADE OF D- AND EDCI 31000 FOR LEVEL UG WITH MIN. GRADE OF D- AND EDCI 37100 FOR LEVEL UG WITH MIN. GRADE OF D- AND EDCI 37200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 6.00. This course is the equivalent of a student teaching experience - the capstone early childhood course. Structured so that candidates have experiences in a setting birth to age eight, with a focus on infants/toddlers and preschoolers. The practical experience is complemented with a seminar that focuses on the issues of guidance and discipline, cultural diversity, and the early childhood profession. Typically offered Summer Fall Spring.

### **EDCI 48900 - Supervised Student Teaching**

**Prerequisite(s):** EDCI 31500 FOR LEVEL UG WITH MIN. GRADE OF C- AND EDCI 31700 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 6.00 to 9.00. Eight weeks of full time student teaching in an academic subject or grade under the supervision of the public school teachers in charge of the classes and supervisors from university. Typically offered Fall Spring.

### **EDCI 49000 - Individual Research And Teaching Experience**

Credit Hours: 3.00. Opportunity for undergraduate students to investigate particular problems in the field of education. Permission of the school/program required. Typically offered Fall Spring Summer.

### **EDCI 49100 - Topics And Issues In Education**

Credit Hours: 1.00 - 4.00. Provides student with opportunity to strengthen preparation through study of selected educational topics and issues based upon individual needs and interests. One area of study is considered in each enrollment. Permission of school/program required. Typically offered Fall Spring Summer.

### **EDCI 49500 - Student Teaching In The Secondary Classroom**

**Prerequisite(s):** EDCI 28600 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND EDCI 20500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 12.00. For the B.S. in Secondary Education, students would be receiving the license in Adolescence and Young Adulthood as well as their Content Area. Therefore, students would complete their student teaching experience in a secondary classroom in their major content area. In the case of dual content areas, the student teaching would take place for eight weeks in one content area and eight weeks in the other. This would partially fulfill the requirements for the secondary teaching license. Typically offered Fall Spring.

### **EDCI 49600 - Student Teaching In The Elementary School**

Credit Hours: 8.00 to 16.00. Full time elementary classroom teaching experiences and a student teaching seminar under the mentorship of the classroom teacher and a University supervisor. Typically offered Fall Spring.

### **EDCI 49700 - Supervised Teaching**

**Prerequisite(s):** EDPS 37000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 6.00 to 12.00. Teaching full-time in a school classroom under the supervision of the teacher in charge of the class and a university supervisor. Typically offered Fall Spring.

### **EDCI 49800 - Supervised Teaching**

Credit Hours: 8.00 to 16.00. Teaching full time in a school classroom under the supervision of the teacher in charge of the class and a University supervisor. Completion of education methods courses and other Gate requirements for the major area and admittance to teacher education required. Typically offered Fall Spring Summer.

### **EDCI 49900 - Supervised Teaching Or Practicum In An Endorsement Area**

Credit Hours: 3.00 to 9.00. Teaching full time in an endorsement area in a school classroom under the supervision of the teacher in charge of the class and a University supervisor. Completion of education courses required for the endorsement area and admittance to teacher education. Typically offered Fall Spring.

### **EDCI 50000 - Foundations Of Literacy**

Credit Hours: 3.00. Survey course in the acquisition of and instruction in reading, writing, and other aspects of language. Typically offered Fall Spring Summer.

### **EDCI 50100 - Problems In Literacy Acquisition: Evaluation And Instruction**

**Prerequisite(s):** EDCI 50000 FOR LEVEL GR WITH MIN. GRADE OF B-

Credit Hours: 3.00. Examines informal and standardized instruments useful for evaluating students who experience difficulties acquiring reading, writing, and other aspects of language. Discusses corrective/remedial instructional strategies appropriate for the classroom and clinic. Supervised practicum. Typically offered Spring.

### **EDCI 50200 - Reading In Middle And Secondary Schools**

Credit Hours: 3.00. A course designed for teachers and prospective teachers in subject matter areas of the junior and senior high school. Surveys of techniques and objectives of reading instruction in the schools with special attention to the opportunities and obligations to teach reading within content areas. Teaching experience helpful but not required. May be taken as part of the sequence leading to reading specialist or for the junior high school endorsement program. Typically offered Fall Spring.

### **EDCI 50900 - Writing In Middle And Secondary Schools**

Credit Hours: 3.00. Focuses on understanding philosophical and theoretical approaches, such as the writing process model, current reading/writing research, and how various approaches fit into existing school curriculum. Typically offered Fall Spring Summer.

### **EDCI 51100 - Teaching Mathematics In The Elementary School**

Credit Hours: 3.00. Historical and current curriculum developments in mathematics education with implications for classroom practice; analysis of instructional strategies; cognitive development; use of research results. Typically offered Fall Spring Summer.

### **EDCI 51300 - Foundations Of Learning Design And Technology**

Credit Hours: 3.00. Provides an historical overview of the field and delineates the foundational knowledge, skills, and attitudes needed by professionals in the field of educational technology and instructional design. Students explore the field by engaging in collaborative projects, along with thinking and writing about various aspects of educational technology and the underlying instructional design theories. Typically offered Summer Fall Spring.

### **EDCI 51400 - Language Arts In The Elementary School**

Credit Hours: 3.00. Research, recent trends, and current developments in the field of language arts and implications for classroom practice in the elementary school. Typically offered Fall Spring Summer.

### **EDCI 51500 - Reading In The Elementary School**

Credit Hours: 3.00. Research, recent trends and current developments in the field of reading instruction. Emphasis will be on improving developmental reading in the elementary school programs rather than on surveying remedial programs. Typically offered Fall Spring Summer.

### **EDCI 51700 - Survey Of Science Education**

Credit Hours: 3.00. Introduction to current issues and research in science education, broadly organized under themes of learning, teaching, and science curriculum. Typically offered Fall.

### **EDCI 51900 - Teaching Learners Of English As A New Language**

Credit Hours: 3.00. (ENGL 51900) This course focuses on current issues and techniques in ESL instruction and assessment for students at the beginning or intermediate stages of English language acquisition Pre-K-12. Emphasis is on the design of materials and instruction that foster English language development in the content areas of the curriculum (i.e., Specially Designed Academic Instruction in English or SDAIE). Some familiarity with elementary and/or secondary teaching methods is assumed. Typically offered Spring.

### **EDCI 52600 - Language Study For Educators**

Credit Hours: 3.00. (ENGL 52900). Covers foundational knowledge in language and linguistics for teachers and educational researchers. Topics include structure and functions of language, language acquisition and development, language diversity, classroom discourse, language and media, and literacy-language arts curriculum. A foundation for work in Literacy and Language Education. Typically offered Spring.

### **EDCI 53201 - School Curriculum: Leadership, School Culture And Change**

Credit Hours: 3.00. This course examines the needs of children and society, explores modern programs and procedures for developing a school community learning plan, and investigates ways to improve present school learning environments and curricula. Master's student standing (or graduate student standing, or as required). Permission of department required. Typically offered Fall Spring.

### **EDCI 53700 - Professional Learning Communities**

Credit Hours: 3.00. In this class students will examine and explore the strategies to implement Professional Learning Communities in their respective districts and/or schools. Students will study and apply the elements of a professional learning community (PLC) as they relate to and effect student learning and increased student achievement. Participants will be engaged in research, evaluation and the design of: 1) framework to meet the diverse needs of students, 2) a positive climate of culture and learning for all students and staff, 3) integration of instructional technology to increase student engagement for students, and 4) current best practices in curriculum, instruction, and assessment. As they progress through course activities, students will create an action plan for the development of a professional community in a school of their choice. Permission of department required. Typically offered Fall Spring.

### **EDCI 53800 - Human Issues In Instructional Technology**

Credit Hours: 3.00. This course serves the needs of instructional technology professionals in K-12, higher education, and industrial/business settings to understand the social, legal, and human issues surrounding education and technology in today's world. This includes understanding assistive technologies for helping individuals with disabilities, human interface design for creation of websites and other software, information security, and the social and legal concerns over copyright and privacy that have emerged in the Information Age. Course may be offered in classroom-based, distance or hybrid formats. Prerequisites: EDCI 56000 within the past five years or completion of the MYTarget2

Assessment, <http://mytarget.iassessment.org> and an interview with the IT program coordinator. Permission of department required. Typically offered Fall Spring Summer.

### **EDCI 55400 - Production Of Instructional Materials**

Credit Hours: 3.00. Involves the design, development, and editing of digitally-based materials for use in computer-based learning environments. Includes planning and implementing text, graphics, audio, and video materials for use as communication and learning tools. Typically offered Fall Spring Summer.

### **EDCI 56000 - Educational Technology For Teaching And Learning**

Credit Hours: 3.00. Educational/training application of instructional technology, including computers, media, and instructional design. Stresses knowledge, skills, and attitudes needed to implement and manage technology in instructional environments. Typically offered Fall Spring Summer.

### **EDCI 56100 - Computer-Assisted Instruction**

Credit Hours: 3.00. Examines aspects of computer-assisted instruction. Primary focus upon application of effective learning design strategies for computer-mediated instruction within popular CAI languages, such as BASIC and PILOT, basic computer-managed instruction system, including practical classroom considerations. Typically offered Fall Spring Summer.

### **EDCI 56600 - Educational Applications Of Multimedia**

Credit Hours: 3.00. Examination of educational applications of hypermedia tools and related research. Creation of hypermedia instructional materials. Incorporation of digitized media (sound, photographs, and motion clips) in hypermedia is explored. Typically offered Fall Spring Summer.

### **EDCI 56900 - Introduction To E-Learning**

Credit Hours: 3.00. This course examines how design and development of instruction are impacted by the use of the computer as delivery system. A primary focus is on effective learning design strategies for computer mediated instruction. Learners will identify and apply effective design with emphasis on project management, planning, and implementation issues. Education or training materials will be developed using appropriate authoring tools as determined by the instructional context. Typically offered Fall Spring Summer.

### **EDCI 57200 - Introduction To Learning Systems Design**

Credit Hours: 3.00. An introduction to the principles of designing instructional materials and to instructional communication theory and techniques. Topics include objectives, student characteristics, media selection, communication variables, message design, and systematic evaluation. Typically offered Fall Spring Summer.

### **EDCI 57300 - Instructional Development Practicum**

Credit Hours: 2.00 or 3.00. Provides supervised field experience in programs involving instructional design development activities. Students participate in ongoing projects in the design, development, and evaluation of instructional materials and training programs in business and industry, medical facilities, or other settings deemed appropriate. Permission of instructor required. Typically offered Fall Spring.

### **EDCI 57500 - Foundations Of Distance Learning**

**Prerequisite(s):** EDCI 57200 FOR LEVEL GR WITH MIN. GRADE OF B-

Credit Hours: 3.00. An introduction to the field of distance learning/education. Examination of basic concepts and principles of distance learning, the theoretical underpinnings of the field, research and application literature, and distance education delivery technologies. Focus is on integration of distance education technologies for learning and teaching. Typically offered Summer Fall Spring.

### **EDCI 58000 - Foundations Of Curriculum**

Credit Hours: 3.00. Introduction to the major historical and philosophical sources of curriculum ideas. Significant forces influencing curriculum decision making. Different theoretical approaches to the construction and analysis of curriculum. Typically offered Fall.

### **EDCI 58500 - Multicultural Education**

Credit Hours: 3.00. The course aims to develop understanding of multicultural education as an on-going reform process that addresses social justice issues through an examination of race, class, gender, ethnicity, language, sexual orientation, etc. Typically offered Fall Spring Summer.

### **EDCI 58700 - Leadership And Management In Educational Technology**

Credit Hours: 3.00. This course addresses the fundamentals of leadership and management of educational technology in a K-12 setting. Students will explore and evaluate computer hardware, software, networks, and lab management, including how they fit into education. This course is designed to provide perspectives on organizational leadership of educational technology, as well as providing future teachers with the ability to troubleshoot basic problems often associated with computers and software in the classroom. Typically offered Fall Spring Summer.

### **EDCI 58900 - Special Topics For Teachers**

Credit Hours: 1.00 to 4.00. Consideration of appropriate professional problems of experienced educational personnel in workshops or in-service programs. Typically offered Fall Spring Summer.

### **EDCI 59000 - Individual Research Problems**

Credit Hours: 1.00 to 6.00. Opportunities for students to study particular problems under the guidance of a member of the This plan of individualized instruction may be used in any field of education or vocational education. Does not include thesis work. Permission of instructor required. Typically offered Fall Spring Summer.

### **EDCI 59100 - Special Topics In Education**

Credit Hours: 1.00 to 4.00. Group study of a current problem or special topic of interest to professional educational personnel. Intensive study of research, theory, or practical aspects of a particular issue within the usual graduate class format. Typically offered Fall Spring Summer.

### **EDCI 60100 - Problems In Literacy Acquisition: Advanced Practicum**

**Prerequisite(s):** EDCI 50000 FOR LEVEL GR WITH MIN. GRADE OF B- AND EDCI 50100 FOR LEVEL GR WITH MIN. GRADE OF B-

Credit Hours: 3.00. Examines strategies for teaching elementary and secondary students who experience moderate to severe difficulties acquiring reading, writing, and other aspects of language. Supervised practicum. Prerequisite: EDCI 50000, 50100. Permission of instructor required. Typically offered Fall Spring Summer.

### **EDCI 60400 - Social Studies In The Elementary School**

Credit Hours: 3.00. Social Studies-content and place in the modern elementary education curriculum. Materials, instruction techniques, evaluation procedures, and understanding the syntax of the structure of social studies. Prerequisite: EDCI 36100. Typically offered Fall Spring Summer.

### **EDCI 60500 - Teaching Integrated Science, Technology, Engineering And Math**

Credit Hours: 3.00. Analysis of historical developments and present trends in science education; the designing, implementation, and evaluation of science programs; the role of research in present and future developments. Typically offered Fall Spring Summer.

### **EDCI 60800 - Individualizing Instruction In The Elementary And Secondary Schools**

Credit Hours: 3.00. This course explores the foundations underlying individualized instruction, the preparation of individualized instruction materials for the class-room, the role of research in individualized instruction, and the future trends and issues in individualized instruction. Completion of a teacher certification program. Typically offered Summer Fall.

### **EDCI 61200 - Seminar In Literacy**

Credit Hours: 3.00. Recent trends and research in literacy. Topics provide in-depth study of literacy acquisition in educational settings. Typically offered Fall.

### **EDCI 61300 - Seminar In The English Language Arts**

Credit Hours: 3.00. (ENGL 69100) Problems in the teaching of English: literature, language, rhetoric. Attention to recent scholarship and to its application in the public schools. Typically offered Fall Spring.

### **EDCI 62400 - Seminar In Social Studies Education**

Credit Hours: 3.00. An investigation of various aspects of the teaching of the social studies. One topic is dealt with in each enrollment. Master's candidates are expected to complete the first three topics. Areas include: (1) philosophic concepts used in the social studies; (2) curricular analysis and examination of new social studies materials; (3) methods of inquiry in the social studies; (4) research methodology in the social studies. Typically offered Fall Spring Summer.

### **EDCI 64800 - Curriculum In Career And Technical Education**

Credit Hours: 3.00. Overview of curriculum in career and technical education programs; business and industry training programs; curriculum planning, development, implementation, and evaluation; review and analysis of curriculum models. Typically offered Fall Spring.

### **EDCI 64900 - Assessment In Career And Technical Education**

Credit Hours: 3.00. Goals and rationale for evaluation in education and work training contexts; assessment and measurement methods, techniques, and procedures; reliability, validity, and accuracy; construction and selection of instruments; data and information collection, analysis, and interpretation; meta evaluation; adaptations and modifications for special needs populations; and using assessment data and information. Typically offered Fall Spring.

### **EDCI 66300 - Interactive Multimedia**

**Prerequisite(s):** EDCI 56100 FOR LEVEL GR WITH MIN. GRADE OF B- AND EDCI 57200 FOR LEVEL GR WITH MIN. GRADE OF B-

Credit Hours: 3.00. Examines computer-based interactive multimedia theory, research, design, development, and evaluation. Includes a digital audio-video production and design of interactive multimedia for stand-alone or online delivery. Prerequisite: EDCI 56100, 57200. Typically offered Fall Spring Summer.

### **EDCI 67200 - Advanced Practices In Learning Systems Design**

**Prerequisite(s):** EDCI 57200 FOR LEVEL GR WITH MIN. GRADE OF B-

Credit Hours: 3.00. Applications of learning systems design to educational situations. In-depth treatment of learner

analysis, task analysis, learning activities design, learner verification and summative evaluation. Focuses on the application of instructional design concepts and principles within authentic ID situations. Prerequisite: EDCI 57200. Typically offered Fall Spring Summer.

### **EDCI 69500 - Internship In Education**

Credit Hours: 1.00 to 10.00. Amount of credit to be determined by nature and extent of the assignment. A special course in selected areas of education, designed to provide practical field experience under professional supervision in selected situations related to the candidate's area of specialization. Permission of instructor required. Typically offered Fall Spring Summer.

### **EDCI 69800 - Research MS Thesis**

Credit Hours: 1.00 to 18.00. Research MS Thesis. Permission of instructor required. Typically offered Fall Spring Summer.

## **Educational and Professional Studies**

### **EDPS 10300 - Introduction To Higher Education**

Credit Hours: 3.00. This course is designed to assist and guide students in maximizing their potential for success at the university by promoting academic growth. Through collaborative learning, this course will promote the concept of life-long learning through the use of the following strategies: utilization of campus resources; goal setting; time management; diversity training; values exploration; career exploration; and critical thinking skills. This course is highly recommended for all freshman. Typically offered Fall Spring Summer.

### **EDPS 22000 - Psychology Of Learning**

Credit Hours: 3.00. An examination of the learner and learning. Study of the cognitive, social, physical, moral and personality development from early childhood through adolescence; implications of developmental stages for educational planning and intervention. Principles of basic learning theories, facilitative conditions and strategies for enhancing learning; classroom management as a means to foster the learner's development and learning. Survey techniques for assessing the learner, learning and identification of learning dysfunctions. Typically offered Fall Spring Summer.

### **EDPS 23500 - Learning And Motivation**

**Prerequisite(s):** EDCI 20500 FOR LEVEL UG WITH MIN. GRADE OF C AND EDCI 28500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Introduction to concepts of learning and motivation in educational contexts (i.e., Educational Psychology). Influence of development, culture, and individual differences on learning and motivation. Uses of assessment and technology in promoting learning and motivation. A field-based experiential component is included. Typically offered Fall Spring Summer.

### **EDPS 23600 - Developmental Theory And Practice In Early Childhood Education**

**Prerequisite(s):** PSY 23500 FOR LEVEL UG WITH MIN. GRADE OF D- OR CDFS 21100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course will explore the theories of child development as they relate to early childhood education. An overview of theoretical perspectives on the developing child will serve as a foundation for examining current practices in early childhood education settings from birth through age eight. There will be a focus on child study (observation and assessments in diverse settings). Child development in all domains and its connections to practical applications in group settings will be studied. Implications of multicultural perspectives for infants/toddler, preprimary and primary age children will be addressed. Typically offered Fall Spring.

### **EDPS 26000 - Introduction To Special Education**

Credit Hours: 3.00. A survey of the field of special education: foundations, areas of exceptionality, teaching strategies, and current issues and trends. Typically offered Fall Spring Summer.

### **EDPS 26500 - The Inclusive Classroom**

**Prerequisite(s):** EDPS 23500 FOR LEVEL UG WITH MIN. GRADE OF D (MAY BE TAKEN CONCURRENTLY) AND EDCI 20500 FOR LEVEL UG WITH MIN. GRADE OF C AND EDCI 28500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Characteristics of students with special needs/talents; strategies for helping students learn and develop in general educational settings. Emphasis placed upon research evidence, case studies, problem-based learning, and development of a plan for an inclusive classroom. A field-based component is included. Typically offered Spring Summer Fall.

### **EDPS 27500 - Observation, Assessment And Documentation**

**Prerequisite(s):** EDPS 23600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The focus of this course is on the methods and tools used for child study to create positive learning environments that foster children's development. Students explore the purpose and value of assessment, examine and

apply the use of systematic observations, documentation, and other effective assessment strategies. Includes an in-depth case study. Typically offered Summer Fall Spring.

### **EDPS 27600 - Young Children With Exceptional Needs**

**Prerequisite(s):** EDPS 23600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The identification of young children's exceptional needs. Study of various developmental challenges and characteristics with a focus on early intervention with resources and referrals. Strategies for adapting early care and education settings for all children and families to ensure education in inclusive settings. Use of the Division for Early Childhood of the Council of Exceptional Children guidelines. Typically offered Summer Fall Spring.

### **EDPS 27700 - Nurturing And Guiding The Young Child**

Credit Hours: 3.00. Explores the connection between the developmental needs of young children and practices for guidance. Methods for management in early care and education settings to promote pro-social behaviors. Typically offered Summer Fall Spring.

### **EDPS 28500 - Diversity And Education**

Credit Hours: 3.00. This course integrates an understanding of diversity with principles of democratic education. Historical, Sociological, Cultural, Political philosophical, and Pedagogical Foundations of diversity are explored and related to issues of pedagogy in a pluralistic society. This course includes an experiential component. Typically offered Fall Spring Summer.

### **EDPS 30300 - Career And Life Planning Seminar**

Credit Hours: 3.00. Students will complete a personal assessment of their values, skills personality traits, interests, life goals and life roles. Students will also become familiar with tools integral to a successful job search, including networking, resume writing, job search correspondence, and interviewing. Finally students will identify possible paths as they are guided through the process of integrating their knowledge of themselves with information they have gathered about the larger world of work. Typically offered Fall Spring.

### **EDPS 30600 - Adolescent And Young Adult Development**

**Prerequisite(s):** EDCI 27200 FOR LEVEL UG WITH MIN. GRADE OF D- AND EDCI 28600 FOR LEVEL UG WITH MIN. GRADE OF D- AND EDPS 30700 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. Candidates learn research-based theories of adolescent and young adult development and how this relates to the teacher's role in the secondary classroom. The influences of development, culture, and classroom contexts on secondary students' learning are examined. The purpose of the field component is to integrate course topics with professional field experiences, and encourage reflective observations of adolescent and young adult development in secondary classrooms. Typically offered Fall Spring Summer.

### **EDPS 30700 - Classroom Climate In Secondary Schools**

**Prerequisite(s):** EDCI 28600 FOR LEVEL UG WITH MIN. GRADE OF D- AND EDCI 27200 FOR LEVEL UG WITH MIN. GRADE OF D- AND EDPS 30600 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. Teacher candidates learn how to develop a supportive, challenging, and growth enhancing classroom community for students. Teachers must develop advanced classroom management skills to create a classroom community that welcomes diversity, makes effective use of technology and provides appropriate educational experiences for students with diverse needs, backgrounds, and developmental levels. This course is designed to help teacher candidates improve their classroom management skills through a variety of educational experiences. Typically offered Fall Spring Summer.

### **EDPS 30800 - Exceptional Learners-Secondary**

**Prerequisite(s):** EDCI 30600 FOR LEVEL UG WITH MIN. GRADE OF D- AND EDCI 30700 FOR LEVEL UG WITH MIN. GRADE OF D- AND EDCI 30900 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. This course addresses characteristics of students with diverse backgrounds of cognitive ability, as well as the strategies for helping these students learn and develop in educational settings. Emphasis is placed on research evidence, case studies, problem-based learning, and development of a plan for a differentiated classroom. It provides candidates with the foundation to be effective teachers of students with exceptional needs and talents in secondary educational settings. Typically offered Fall Spring Summer.

### **EDPS 37000 - Teaching Students With Diverse Learning Needs In K-12 Class**

**Prerequisite(s):** EDCI 35500 FOR LEVEL UG WITH MIN. GRADE OF C- AND EDPS 26000 FOR LEVEL UG WITH MIN. GRADE OF C- AND 001 FOR MIN. SCORE OF 220 AND 002 FOR MIN. SCORE OF 220 AND 003 FOR MIN. SCORE OF 220

Credit Hours: 3.00. EDPS 37000 builds on basic concepts presented in EDPS 26000. The course develops a knowledge base and practical strategies that will enable teachers to help every student succeed-including students with disabilities, those with diverse cultural backgrounds, students with limited English proficiency, students who are considered at risk" for academic failure and those who are gifted and talented. Topics include planning and grouping strategies classroom management collaboration skills curriculum adaptations teaching strategies and supported inclusive education. Field experiences are integrated with classroom instruction. Typically offered Fall Spring Summer.

### **EDPS 38000 - Special Education Law For Teachers**

**Prerequisite(s):** EDPS 26000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. The purpose of this course is to provide pre-service teachers with a general understanding of the educational entitlement and civil rights of children with disabilities. Laws ensuring the provision of special education to students with disabilities are based on constitutional principles, written and enacted by legislatures and administrative agencies, and interpreted by the courts. It is through the interaction of these various components of the legal system, legislative and judicial, that the field of special education has evolved. The knowledge and skills gained in this course shape the advocacy and ethical dispositions of the teacher. Permission of Department required. Typically offered Fall Spring.

### **EDPS 42000 - Creating And Managing The Inclusive Classroom**

Credit Hours: 3.00. This course develops skills in classroom organization and management at the elementary level. Topics include classroom discipline systems and responses, teaching and improving student interpersonal skills, establishing and maintaining positive and productive relationships with families, responding to and building support networks for students with special needs, and a classroom design project outlining how student behavioral expectations are established, monitored, assessed, and revised. Typically offered Fall Spring.

### **EDPS 43000 - Creating And Managing Learning Environments**

Credit Hours: 3.00. This course develops skills in classroom organization and management. It includes evidence-based classroom discipline, interpersonal skills, administrative aspects of teaching, working with families, and building support networks. Permission of school/program required. Typically offered Fall Spring Summer.

### **EDPS 45000 - Teaching Students With Disabilities**

**Prerequisite(s):** EDPS 26000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 4.00. This course focuses on the education, differentiation and use of technology with students who have special needs. Topics include: the design and implementation of differentiated instruction based on individual need, implementing the strategies and interventions that have been established in individualized educational programs (IEP's) including the use of assistive technologies as appropriate, and applying behavior management principles to foster emotional and social development, and academic success. This course has a 45-hour field component. Permission of Department required. Typically offered Fall Spring.

### **EDPS 49000 - Individual Research And Teaching Experience**

Credit Hours: 1.00 to 8.00. Opportunity for undergraduate students to investigate particular problems in the field of education. Permission of the school/program required. Typically offered Fall Spring Summer.

### **EDPS 49100 - Topics And Issues In Education**

Credit Hours: 1.00 to 3.00. Provides student with opportunity to strengthen preparation through study of selected educational topics and issues based upon individual needs and interests. One topic is considered in each enrollment. Permission of the school/program is required. Typically offered Fall Spring Summer.

### **EDPS 50000 - Group Counseling Theories And Techniques**

Credit Hours: 3.00. Theoretical and experiential overview of fundamental elements of group work and group counseling processes. Broad topics include purposes and types of groups, therapeutic factors and stages of leadership skills, and multicultural, ethical, and legal aspects of group counseling. Typically offered Fall Spring.

### **EDPS 50100 - Introduction To School Counseling**

Credit Hours: 3.00. Presents an overview of counseling in elementary, middle, and secondary schools. Treats the history of school counseling, developmental characteristics and problems of students, and counseling program elements and issues. Typically offered Summer Fall Spring.

### **EDPS 50300 - Introduction To Mental Health Counseling**

Credit Hours: 3.00. Provides an overview of mental health counseling as it relates to community issues and needs. Roles and settings for the mental health counselor and specific intervention skills will be stressed. Typically offered Fall.

### **EDPS 50500 - Foundations Of Career Development And Assessment**

Credit Hours: 3.00. Treats career development theories which emphasize aspects of the self in decision making, occupational classification systems, and educational and vocational information with applications to individual and group counseling. Typically offered Summer Fall Spring.

### **EDPS 50700 - Counseling Multicultural And Diverse Populations**



Credit Hours: 3.00. Counseling strategies for multicultural and diverse populations encountered by helping professionals. Among the populations considered are ethnic and cultural minorities, older persons, the gifted, and the disabled. Typically offered Spring Summer.

### **EDPS 50900 - Expressive Arts: Music, Movement, And Spiritual Expression**

Credit Hours: 3.00. This course provides an introduction to the creative process and the use of that process in development of music, movement, and spiritual expression in traditions and cultures of healing. It presents evidence that the expansion of the creative potential with all of us is valuable for professional counselors to recognize and use in treatment. Further, the course will include definitions, historical roots, theoretical underpinnings, and basic elements of music, movement, and spiritual expression in art therapy. Course topics will include an examination of the major contributors in the field, and how music, movement, and spiritual expression can be used to affect behavioral, emotional, and psychological changes, and how art therapy can be used in the context of various psychological approaches. Typically offered Fall Spring Summer.

### **EDPS 51100 - Expressive Arts Professional Project: Healing Through The Arts**

Credit Hours: 3.00. This capstone professional project is an opportunity to work with clients from a particular mentally ill population, define a treatment issue within that population, and use an original art therapy approach based in integrated theories as a treatment option for the defined issue. The general objective of this course is to develop the candidate's ability to find innovative solutions to problems that arise among clients in the practice of counseling through an understanding of the creative process and through enhanced professional creative expression. Typically offered Fall Spring Summer.

### **EDPS 51200 - Expressive Arts: Painting, Poetry, And Dreams**

Credit Hours: 3.00. This course provides an introduction to the creative process and the use of that process in development of self-awareness and empathetic relationships with self and clients in the counseling relationship. The course will include definitions, historical roots, theoretical underpinnings, and basic elements of the field of art therapy. Course topics will include an examination of the major contributors in that field, what art therapists do, where art therapists work, how art-making can be used to affect behavior, emotional, and psychological changes, and how art therapy can be used in the context of various psychological approaches. Typically offered Fall Spring Summer.

### **EDPS 51500 - Applied Behavior Analysis For Teachers**

Credit Hours: 3.00. Application of learning theory, measurement procedures, verification of functional relationships, and developing knowledge of current significant research in applied behavior analysis. Typically offered Fall Spring Summer.

### **EDPS 51600 - Addictions Seminar I: HIV/AIDS And Dual Diagnosis**

Credit Hours: 3.00. This course is intended to provide awareness and knowledge about concomitant disorders and substance use disorders and the assessment and recommended treatment for dually diagnosed clients. The course will also provide an overview of HIV/AIDS and its relation to substance use disorders. These topics will be addressed within a culturally aware and competent framework. Permission of department required. Typically offered Fall Spring Summer.

### **EDPS 51700 - Addictions Seminar II: Ethics, Criminal Justice, And Social Systems**

Credit Hours: 3.00. This course is intended to provide awareness and knowledge about the ethics of working within the substance abuse setting. Students will receive a better understanding of how this population is represented within the criminal justice system, and how other social systems can be used in both prevention and treatment of substance abuse. The ICAADA core functions covered are Orientation, Client Education, and Consultation. Permission of Department required. Typically offered Fall Spring Summer.

### **EDPS 52100 - Counseling And Psychopathology**

Credit Hours: 3.00. Development of an understanding of the DSM-V-TR, diagnosis, and treatment planning. Permission of Department required. Typically offered Fall Spring Summer.

### **EDPS 52200 - Crisis Intervention And Emergency Management**

Credit Hours: 3.00. This course provides in-depth study of the nature of crises and crisis intervention. Students will learn crisis theory, crisis intervention models, and practical skills for effective crisis intervention. Over the course of the semester, we will attend to a variety of crises including crises related to suicide, violence, victimization, psychiatric illness, chemical dependency, individual or family-level trauma, and community-wide disasters. Emphasis will be placed on the counselor's development of crisis assessment, management, and short-term intervention skills. Special attention will be given to cultural, ethical, and legal considerations. Permission of department required. Typically offered Fall Spring Summer.

### **EDPS 52800 - Research In Counseling**

Credit Hours: 3.00. This course is a graduate level seminar course for mental health and school counseling students. This course will provide students with an in-depth understanding of both quantitative and qualitative research methods. Critical reading skills and basic descriptive statistics will be covered allowing students to better understand and utilize research literature. Principles, practices, and applications of need assessment and program evaluation will be presented. Students will be provided with the opportunity to design, execute, and report results from a class research project. Permission of department required. Typically offered Fall Spring Summer.

### **EDPS 52900 - Techniques Of Addictions Counseling: Counseling Skills, Groups, And Processes**

Credit Hours: 3.00. This course is designed to help students develop and apply basic counseling skills and helping attitudes for addictions counseling. Self-evaluation, giving and receiving feedback and reflection upon the development of clinical skills and ethical tendencies is an essential part of this course. The ICAADA core functions of Assessment Intake, Treatment Planning, Counseling, and Report/Record Keeping will be included. Permission of department required. Typically offered Fall Spring Summer.

### **EDPS 53000 - Advanced Educational Psychology**

Credit Hours: 3.00. Theories of learning and development, research on instruction and learning, and principles of measurement applied to educational problems. Typically offered Fall Spring Summer.

### **EDPS 53100 - Introduction To Measurement And Evaluation**

Credit Hours: 3.00. An introduction to the basic concepts and principles of measurement and evaluation with special emphasis on descriptive statistics, and teacher-made and standardized tests. Typically offered Summer Fall Spring.

### **EDPS 53200 - Measuring Educational Achievement**

Credit Hours: 3.00. A course in developing, analyzing, and interpreting measures of educational achievement. Emphasis is placed upon cognitive tests. Nontest techniques for assessing behavior are also explored. Prior experience with statistics or measurement, although helpful, is not required for this course. Typically offered Fall Spring.

### **EDPS 53300 - Introduction To Educational Research I: Methodology**

Credit Hours: 3.00. This course presents a sequence of journal articles and exercises that help introduce the foundational concepts of the course, including: research design, reliability and validity, various methodologies commonly used in educational research, and basic quantitative and qualitative data analyses. In addition, contrasting research conclusions are shown in the articles to help students learn why careful analysis of articles and their theoretical framing is critical to evaluating their conclusions. Typically offered Fall Spring Summer.

### **EDPS 53900 - Ethics And Professional Identity For Mental Health Counselors**

Credit Hours: 3.00. This seminar is designed to introduce students to ethical issues that occur in mental health counseling and psychotherapy, resources to assist in the resolution of these issues, and considerations needed. Permission of Department required. Typically offered Fall Spring Summer.

### **EDPS 54000 - Gifted, Creative And Talented Children**

Credit Hours: 3.00. This course is an introduction to the intellectual, social, and emotional characteristics of gifted youth; philosophies of gifted education; and programmatic and classroom approaches for supporting gifted students generally and within different domains (e.g., intellectual, academic, creative, artistic, leadership). Typically offered Fall Spring Summer.

### **EDPS 54100 - Identification And Evaluation In Gifted Education**

Credit Hours: 3.00. This course provides an introduction to the instruments and procedures for identifying gifted, creative, and talented students, as well as the issues and procedures for evaluating gifted programs and individual student progress. Typically offered Fall Spring Summer.

### **EDPS 54200 - Curriculum And Program Development In Gifted Education**

Credit Hours: 3.00. This course is an introduction to the curriculum development and program design for meeting the needs of gifted, creative, and talented students. Students will be exposed to established program and curriculum models, as well as the nuts and bolts of developing curricular plans, materials, and specialized programs that support the advanced learning needs of gifted students. Typically offered Fall Spring Summer.

### **EDPS 54600 - Addictions Practicum**

Credit Hours: 3.00. This course is structured as a seminar designed to include a combination of lectures, discussions, supervision, and constructive feedback. It will include assignments that are geared toward developing each student's clinical abilities. The first half of class will include didactic instruction, discussion and case presentations, practicing addictions assessment, goal setting, and treatment planning skills. The second half of class will be dedicated to group supervision. Permission of department required. Typically offered Fall Spring Summer.

### **EDPS 56300 - Identification, Evaluation, And Assessment Of Exceptional Individuals**

Credit Hours: 3.00. Advanced procedures for educational assessment of exceptional individuals: norm-referenced and curriculum-based measurement, error analyses, and observational ratings. Adaptations and selections of tests for sensory impairments, behavioral styles, different intelligence levels and ages. Typically offered Fall Spring Summer.

### **EDPS 56400 - Mild Mental Handicaps: Historical Perspectives, Etiology, And Characteristics**

Credit Hours: 3.00. Advanced study of persons with varying disabilities. Topics include: historical development; theoretical models; etiological factors; characteristics; assessment and intervention. Typically offered Fall.

### **EDPS 56500 - Intervention Strategies And Research**

Credit Hours: 3.00. Analysis of intervention strategies and research with individuals with varying disabilities. Reading comprehension; written composition; mathematics; mnemonic strategies; metacognitive strategies; self-monitoring; social problem solving; and transitional instruction. Typically offered Fall.

### **EDPS 56600 - Graduate Supervised Teaching Special Education**

Credit Hours: 1.00 to 16.00. Demonstration of ability to function independently in special education setting by appropriately planning for student needs, implementing and evaluating plans, establishing appropriate classroom discipline, and interacting professionally with staff and parents. Permission of instructor required. Typically offered Fall Spring Summer.

### **EDPS 56800 - Social, Legal, And Ethical Issues In Special Education**

Credit Hours: 3.00. Survey of difference and similarities of children with exceptionality, including their nature and characteristics related to their developmental and educational needs. Analysis and practical application of social, legal, and ethical issues in the field of special education. Typically offered Fall Spring Summer.

### **EDPS 57100 - Advanced Assistive Technology**

Credit Hours: 3.00. Introduction and overview of assistive technology for communication, education, employment, recreation, and daily living activities. Typically offered Spring.

### **EDPS 58900 - Special Topics For Teachers**

Credit Hours: 1.00 to 4.00. Consideration of appropriate professional problems of experienced educational personnel in workshops or in-service programs. Typically offered Fall Spring Summer.

### **EDPS 59000 - Individual Research Problems**

Credit Hours: 1.00 to 6.00. Opportunities for students to study particular problems under the guidance of a member of the This plan of individualized instruction may be used in any field of education or vocational education. Does not include thesis work. Permission of instructor required. Typically offered Fall Spring Summer.

### **EDPS 59100 - Special Topics In Education**

Credit Hours: 1.00 to 4.00. Group study of a current problem or special topic of interest to professional educational personnel. Intensive study of research, theory, or practical aspects of a particular issue within the usual graduate class format. Typically offered Fall Spring Summer.

### **EDPS 60000 - Counseling Theories And Techniques**

Credit Hours: 3.00. Examination of major counseling theories and counseling techniques, professional and ethical issues. Permission of instructor required. Typically offered Fall Spring Summer.

### **EDPS 60100 - Counseling Theories And Techniques Laboratory**

Credit Hours: 3.00. Use of counseling techniques in a supervised laboratory; application of theories and techniques within varying employment settings. Concurrent Prerequisite: EDPS 60000. Typically offered Fall Spring Summer.

### **EDPS 60900 - Program Development And Organization In Human Services**

Credit Hours: 2.00 or 3.00. Issues and procedures in program development, management, organization, and administration for school guidance, college student affairs, and mental health services. Also treats administrative theory, intervention strategies, staff development, and evaluation. Prerequisite: EDPS 50100 or 50300 or 50400. Typically offered Spring Summer.

### **EDPS 61000 - School Counseling Practicum**

**Prerequisite(s):** EDPS 60000 FOR LEVEL GR WITH MIN. GRADE OF B- AND EDPS 60100 FOR LEVEL GR WITH MIN. GRADE OF B-

Credit Hours: 3.00. EDPS 61000 is a field experience for first year master's students in school counseling, consisting of a minimum of 100 hours in a school, under the supervision of both a site supervisor and a campus supervisor.

Permission of instructor required. Prerequisites: EDPS 60000 and EDPS 60100. Permission of instructor required. Typically offered Spring.

### **EDPS 61400 - Advanced Counseling Practicum**

Credit Hours: 3.00. Supervised use of personal and career counseling techniques applied to complex and difficult client situations. Permission of instructor required. Typically offered Fall Spring Summer.

### **EDPS 62000 - Counseling Seminar**

Credit Hours: 1.00 to 4.00. Recent investigation and research in (1) counselor supervision; (2) professional issues; (3) counseling theories; (4) education of counselors and student personnel workers; (5) counseling methodology; (6) vocational development; (7) elementary school counseling; (8) counselor consultation; and (9) other relevant topics. One topic is dealt with in each enrollment. Prerequisite: Open to graduate students who have successfully completed 12 credit hours of previous counseling personnel services courses. Typically offered Fall Spring Summer.

### **EDPS 66400 - Seminar In Special Education**

Credit Hours: 1.00 to 4.00. A critical analysis of or special assignments related to research, practice, and selected problems in special education or in specific disability areas. One topic is considered in each enrollment. For advanced graduate students. Permission of instructor required. Typically offered Fall Spring Summer.

### **EDPS 69500 - Internship In Education**

Credit Hours: 1.00 to 10.00. Amount of credit to be determined by nature and extent of the assignment. A special course in selected areas of education, designed to provide practical field experience under professional supervision in selected situations related to the candidate's area of specialization. Permission of instructor required. Typically offered Fall Spring Summer.

### **EDPS 69800 - Research MS Thesis**

Credit Hours: 1.00 to 18.00. Research MS Thesis. Permission of instructor required. Typically offered Fall Spring Summer.

## **Educational Leadership**

### **EDST 20000 - History And Philosophy Of Education**

Credit Hours: 3.00. (EDFA 20000) How history and philosophy have informed school organization, curriculum, and teaching practice. Students develop their own philosophies of teaching. Topics include continuities and discontinuities of schooling, colonial period to present. Conflicting demands placed upon schools. Issues of race, class, and gender inform debates over school purposes and practices. Typically offered Fall Spring Summer.

### **EDST 27000 - Early Childhood Education**

Credit Hours: 3.00. An introduction to the field of early childhood care and education including career options and variety of early childhood settings. The history, philosophy, current trends and issues of early childhood will be explored. Students will observe and interact with children and early childhood professionals. Typically offered Summer Fall Spring.

### **EDST 49000 - Individual Research And Teaching Experience**

Credit Hours: 1.00 to 8.00. Primarily for teacher candidates requiring special, individualized experience in research or teaching. Permission of instructor required. Typically offered Fall Spring Summer.

### **EDST 50000 - Philosophy Of Education**

Credit Hours: 3.00. (EDFA 50000) Study of fundamental philosophical issues and concepts in education. Treatment of historical and contemporary positions in educational philosophy and connection of philosophical understandings to American schools. Typically offered Fall Spring Summer.

### **EDST 58900 - Special Topics For Teachers**

Credit Hours: 1.00 to 4.00. (EDFA 58900) Consideration of appropriate professional problems of experienced educational personnel in workshops or in-service programs. Typically offered Fall Spring Summer.

## **English**

### **ENGL 00700 - Writing Laboratory**

Credit Hours: 0.00. Emphasis on patterns of organization and fundamentals of usage in composition for ENGL 104 students with an English Placement Score between 33 and 37. Typically offered Fall Spring Summer.

### **ENGL 01110 - Community Learning Elective**

Credit Hours: 0.00. This course should provide students with the opportunity to practice English communication with native speakers while completing community service. Students will travel to an off-campus location in the community. At the sites, students may be engaged in activities such as games, sports, arts and crafts, tutoring, language teaching, and intercultural activities with community members such as elementary school students. Permission of department required. Typically offered Fall Spring.

### **ENGL 01800 - Fundamentals Of Reading**

Credit Hours: 0.00. Aims to build the student's functional reading level to meet the requirements of college textbooks. Stresses improvement of the basic silent reading skills of word recognition, vocabulary building literal comprehension and rate fluency. Some instruction in study techniques. Individualized and performance-oriented. Typically offered Fall Spring Summer.

### **ENGL 01900 - English Composition For English As A Second Language (ESL) Students**

Credit Hours: 0.00. English composition for those students whose common use of English indicates a need for instruction in English as a second language. An equivalent of ENGL 020. Typically offered Fall Spring Summer.

### **ENGL 02000 - Fundamentals Of Writing**

Credit Hours: 0.00. A review of writing fundamentals for those who need further training and practice. Emphasis will be on English grammar, punctuation, spelling, sentence structure, and paragraph organization. Typically offered Fall Spring Summer.

### **ENGL 02100 - Low-Intermediate Grammar And Writing**

Credit Hours: 0.00. This is a "low proficiency" course that focuses on skills and strategies for effective academic writing. This course focuses on developing basic ability to write effectively in English through extensive practice in pre-writing, drafting, revising and editing. Students engage in discussion and small group work to develop and improve basic composition skills, including organization, rhetoric, grammar and mechanics, and sentence structure. Typically offered Summer Fall Spring.

### **ENGL 02200 - Intermediate Grammar And Writing**

**Prerequisite(s):** ENGL 02100 FOR LEVEL UG WITH MIN. GRADE OF P

Credit Hours: 0.00. This course focuses on skills and strategies for effective academic writing. This course focuses on the development of composition skills, with emphasis placed on organization, sentence structure, grammar, and idea clarity. Students engage in discussion and small group work to develop and improve composition skills, including organization, rhetoric, grammar and mechanics, and sentence structure. Typically offered Summer Fall Spring.

### **ENGL 02300 - Advanced Grammar And Writing**

**Prerequisite(s):** ENGL 02200 FOR LEVEL UG WITH MIN. GRADE OF P

Credit Hours: 0.00. This course focuses on skills and strategies for effective academic writing in the mainstream academic setting. Students at this level are expected to write at an advanced level. Students practice various rhetorical aspects of writing while focusing on improving the cohesion, unity, and clarity of ideas. Students engage in discussion and small group work to enhance and develop advanced composition skills for academic writing. Typically offered Summer Fall Spring.

### **ENGL 02400 - Building Skills With Stories**

Credit Hours: 0.00. Building Skills with Stories is a multi-skills foundations-level course. In this course, students will read fictional stories and use these stories as the context for practicing a variety of skills. A focus will be on developing vocabulary through target words in the stories and through expansion activities. Students will also work on grammar, pronunciation, and spelling as well as improve their writing through responses to the stories and their speaking through discussions about them. Permission of department required. Typically offered Fall Spring Summer.

### **ENGL 02500 - Introduction To American Culture**

Credit Hours: 0.00. This is an elective for students with Low-Intermediate skill level. Each section of ENGL 02500 will introduce American Culture through different themes and skill emphasis, such as film, reading and writing short stories, etc. This course may not be substituted for English 10400 or English 10500, nor be counted toward degree requirements. Typically offered Fall Spring Summer.

### **ENGL 02600 - Foundations Writing**

Credit Hours: 0.00. Foundations Writing is an introductory writing course that focuses on skills and strategies for writing sentences and paragraphs. Through class activities and writing assignments, this course will build your grammar skills and improve your writing fluency. In the second half of the semester, you will be introduced to academic paragraphs. Permission of department required. Typically offered Fall Spring Summer.

### **ENGL 03000 - Foundations Listening And Speaking**

Credit Hours: 0.00. Foundations Listening and Speaking is a course intended for students who did not meet the qualifications for admittance into the ELP's level 1 low-intermediate course. The purpose of this course is to prepare the students for successful matriculation into level 1 and to provide them with solid listening and speaking skill sets in English; skills and abilities that will surely increase their chances of future academic success overall. Permission of department required. Typically offered Fall Spring Summer.

### **ENGL 03100 - Low-Intermediate Listening And Speaking**

Credit Hours: 0.00. This course focuses on developing basic listening and conversation skills. Students practice listening and speaking about various topics, both inside and outside of the classroom, in order to establish a solid foundation in this essential skill. A wide variety of listening excerpts, discussion prompts, and small-group tasks, assist in the development of listening comprehension and oral fluency and accuracy. Typically offered Summer Fall Spring.

### **ENGL 03200 - Intermediate Listening And Speaking**

**Prerequisite(s):** ENGL 03100 FOR LEVEL UG WITH MIN. GRADE OF P

Credit Hours: 0.00. This course focuses on strategies for the further development of listening skills and oral fluency in an academic context. Students at this level practice listening and speaking about various personal and academic topics, both inside and outside the classroom, in order to expand these abilities. A wide variety of listening excerpts, discussion prompts, and small-group tasks, assist in the development of listening comprehension and oral fluency and accuracy. Typically offered Summer Fall Spring.

### **ENGL 03300 - Advanced Listening And Speaking**

**Prerequisite(s):** ENGL 03200 FOR LEVEL UG WITH MIN. GRADE OF P

Credit Hours: 0.00. This course focuses on skills and strategies for the further development of effective academic and social listening and speaking skills in English. Students at this level are expected to practice listening and speaking extensively about various topics, both inside and outside the classroom, in order to expand their listening abilities. A wide variety of listening excerpts, discussion prompts, and small-group tasks, prepare students for listening and speaking in a mainstream academic setting. Typically offered Summer Fall Spring.

### **ENGL 03500 - English Communication Skills**

Credit Hours: 0.00. This is an elective for students with Intermediate skill level designed to provide students with additional instruction in reading, writing, or listening and speaking. Each section of this elective will approach English

language skills through a different theme and skill emphasis, such as film, reading and writing short stories, American culture, etc. This course may not be substituted for English 10400 or English 10500, nor be counted toward degree requirements. Typically offered Fall Spring Summer.

### **ENGL 04000 - Foundations Reading**

Credit Hours: 0.00. Foundations Reading is designed for beginning students with limited or no basic formal instruction in reading in English. The purpose of this course is to develop a strong foundation in basic reading literacy skills, the General Service List vocabulary, beginning academic vocabulary, and spelling foundations to improve reading skills. Students at this level engage in silent sustained reading primarily of non-fiction, high interest texts in groups with teacher support. Permission of department required. Typically offered Fall Spring Summer.

### **ENGL 04100 - Low-Intermediate Reading Comprehension**

Credit Hours: 0.00. This is a course that focuses on skills and strategies for effective reading at a basic level. Students at this level are expected to read both inside and outside the classroom in order to improve and refine their reading skills. Students will practice a number of reading strategies for reading faster, understanding vocabulary in context and will practice using strategic reading skills. Discussion and small group work follow reading selections to help develop critical reading and thinking skills. Typically offered Summer Fall Spring.

### **ENGL 04200 - Intermediate Reading Comprehension**

**Prerequisite(s):** ENGL 04100 FOR LEVEL UG WITH MIN. GRADE OF P

Credit Hours: 0.00. This course focuses on skills and strategies for effective academic reading. Students at this level are expected to read extensively, both inside and outside the classroom, in order to improve and refine their reading skills. Students practice a number of reading strategies for reading faster, understanding vocabulary in context and will practice using strategic reading skills. Discussion and small group work follow reading selections to help develop critical reading and thinking skills. The increase in contact hours will provide the time needed for effective instruction. Typically offered Summer Fall Spring.

### **ENGL 04300 - Advanced Reading Comprehension**

**Prerequisite(s):** ENGL 04200 FOR LEVEL UG WITH MIN. GRADE OF P

Credit Hours: 0.00. This is an advanced reading course that focuses on skills and strategies for effective academic reading. Students at this level are expected to read extensively, both inside and outside the classroom, in order to improve and refine their reading skills. Students practice a number of reading strategies for reading faster and understanding vocabulary in context. Discussion and small group work follow reading selections to help develop critical reading and thinking skills. Typically offered Summer Fall Spring.

### **ENGL 04500 - Academic Study Skills**

**Prerequisite(s):** ENGL 03500 FOR LEVEL UG WITH MIN. GRADE OF S

Credit Hours: 0.00. This is an elective for students with Advanced skill level designed to provide students with additional instruction in reading, writing, or listening and speaking. Each section of this course will approach academic study skills through a different theme and skill emphasis, such as film, reading and writing short stories, etc. This course may not be substituted for English 10400 or English 10500, nor be counted toward degree requirements. Typically offered Fall Spring Summer.

### **ENGL 05100 - Topics In English As A Second Language**

Credit Hours: 0.00. This is a variable title, variable contact hour (0 to 6) course and is available for students at all skill levels. May be repeated as topics vary. This course may not be substituted for English 10400 or English 10500, nor be counted toward degree requirements. Typically offered Fall Spring Summer.

### **ENGL 10000 - English Composition**

Credit Hours: 4.00. For first-year students needing intensive instruction in the fundamentals of English composition as preparation for enrollment in other composition courses. Upon completion of this course, students will be assigned to subsequent composition courses according to the teacher's recommendation. Typically offered Fall Spring.

### **ENGL 10100 - English Composition I**

**Prerequisite(s):** HENG FOR MIN. SCORE OF 2.50

Credit Hours: 3.00. Prerequisite for all courses in English except ENGL 10000 and any other courses specified by the department. The first semester of the first-year composition sequence. This course is intended to help students write clear and effective prose for their work at the University and beyond. It includes the study of the writing process, matters of grammar, structure, and style, and entails extensive practice in the writing and revising of expository essays. Students must earn at least a C to qualify for enrollment in English 10200. Typically offered Fall Spring Summer. CTL: IEL 1240 English Composition I

### **ENGL 10200 - English Composition II**

**Prerequisite(s):** ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. The second semester of the first-year composition sequence. Students practice critical reading and thinking, and arguing a thesis in clear and effective prose. The course also involves preparation of at least two research papers. Typically offered Fall Spring Summer. CTL: IEL 1241 English Composition II

### **ENGL 10400 - English Composition I**

Credit Hours: 3.00. Emphasis on the organization of the expository theme. Directed writings of themes based on personal experience, on the relationship between experience and language, and on the relationship between experience and ideas. Typically offered Fall Spring Summer.

### **ENGL 10500 - English Composition II**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. The second half of the basic composition sequence. Extensive practice in writing clear and effective prose. Instruction in logic, structure, and style. Typically offered Fall Spring Summer.

### **ENGL 10600 - First-Year Composition**

Credit Hours: 4.00. Extensive practice in writing clear and effective prose. Instruction in organization, audience, style, and research-based writing. Typically offered Fall Spring Summer. NOTE: Concurrent registration is not permitted for ENGL 10600 and COM 11400.

### **ENGL 10800 - Accelerated First-Year Composition**

Credit Hours: 3.00. An accelerated composition course that substitutes for ENGL 10600 for students showing superior writing ability. Typically offered Summer Fall Spring.

### **ENGL 18600 - College Reading And Study Skills**

Credit Hours: 3.00. Emphasizes development of effective textbook reading and review strategies, acquisition of college-level vocabulary, utilization of library resources, improvement of such classroom learning skills as lecture note-taking and test taking. Typically offered Fall Spring Summer.

### **ENGL 20100 - The Nature Of Literary Study**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A study of literary concepts and critical procedures as applied to representative poetry, fiction, and drama, with practice in critical writing. Required of English majors. Typically offered Fall Spring.

### **ENGL 20300 - Introduction To Research For Professional Writers**

Credit Hours: 3.00. Introduction to research sources and methods useful for professional writers, including electronic resources. Focus on collecting print and online information, interviewing, surveying, and conducting observations; and on evaluating, summarizing, analyzing, and reporting research. Typically offered Summer Fall Spring.

### **ENGL 20400 - Special Topics In Writing**

**Prerequisite(s):** (ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF D AND ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D) OR (ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF D AND ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 3.00. A course in writing, with the special topic selected by the instructor. Typically offered Fall Spring.

### **ENGL 20500 - Introduction To Creative Writing**

**Prerequisite(s):** (ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- AND ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF D- AND ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D-)

Credit Hours: 3.00. Practice in writing short prose narratives and poetry for students who have finished composition and wish to develop their skills further. Workshop criticism. Typically offered Summer Fall Spring. CTL: IEL 1230 Introduction To Creative Writing

### **ENGL 21600 - Ethics And Literature**

**Prerequisite(s):** ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A consideration of ethical questions through analysis of literary texts. Typically offered Spring.

### **ENGL 22000 - Technical Report Writing**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A study of application of the principles of good writing in industrial reporting with emphasis on the techniques of presenting information graphically as well as in a clear, concise written form. Typically offered Fall Spring Summer.

### **ENGL 22100 - Introduction To Shakespeare**

**Prerequisite(s):** ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C OR ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An introduction to the works of William Shakespeare. Attention to the challenges of poetic compression and Elizabethan English, the dense web of allusiveness in the plays, their staging and self-conscious theatricality, the historical and cultural surroundings, and the extravagant afterlife of Shakespeare around the world. Typically offered Fall Spring Summer.

### **ENGL 22700 - Elements Of Linguistics**

**Prerequisite(s):** (ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF D AND ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D) OR (ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF D AND ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D)

Credit Hours: 3.00. A summary of what is known about human language, its structure, its universality, and its diversity; language in its social setting; language in relation to other aspects of human inquiry and knowledge. Credit will not be awarded for both ENGL 22700 and LC 26100. Typically offered Fall Spring Summer. CTL:IEL 1260 Introduction To Linguistics

### **ENGL 23000 - Great Narrative Works**

**Prerequisite(s):** ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C OR ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Reading and discussion of great narratives from Homer's Odyssey to the present, considering works from a variety of cultures and time periods in order to develop an understanding of their ideas, structures, styles, and cultural values. Typically offered Fall Spring Summer.

### **ENGL 23100 - Introduction To Literature**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Reading and discussion of English, U.S. and international literature to develop a basic understanding of ideas, forms, genres, and styles associated with diverse literary traditions. Writing about literature to foster skill in critical analysis. Typically offered Fall Spring.

### **ENGL 23200 - Thematic Studies In Literature**

**Prerequisite(s):** ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C OR ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Examination of a particular theme, such as the hero, death, or the city, and the techniques by which it is treated in various literary works, usually in more than one genre. Current offerings available from counselors. Typically offered Fall Spring Summer.

### **ENGL 23500 - Introduction To Drama**

**Prerequisite(s):** ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C OR ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Reading and discussion of plays of various styles from significant periods of dramatic literature aimed at enhancing the understanding and appreciation of the form and content of all drama. Typically offered Summer Fall Spring.

### **ENGL 23700 - Introduction To Poetry**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. How to read poetry. Primary emphasis, based upon the assumption that poetry is not as familiar to students as other modes of expression, is the function of diction, metrics, figures of speech, and theme; the place of a poem in history uses of poetry, etc. Typically offered Fall Spring Summer.

### **ENGL 23800 - Introduction To Fiction**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR



LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Reading and discussion of short stories and several novels to promote understanding of the range, values, techniques, and meanings of fiction. Typically offered Fall Spring Summer.

### **ENGL 23900 - Introduction To Biography**

**Prerequisite(s):** ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C OR ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Reading and discussion of modern biographies and influential earlier texts. Special attention given to the history of biographical writing and to the study of biography as a recognizable form of writing and a means of understanding and ordering human experience. Typically offered Summer Fall Spring.

### **ENGL 24000 - Survey Of The British Literature: From The Beginnings Through The Neoclassical Period**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An introduction to English literature from the Anglo-Saxon age through the eighteenth century neoclassical period. The course may also treat significant minor writers in their relation to literary movements and ideas. Typically offered Fall.

### **ENGL 24100 - Survey Of The British Literature: From The Rise Of Romanticism To The Modern Period**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Surveys authors, periods, and themes of British literature from the late eighteenth century through the modern period. The course may also treat significant minor writers in their relation to literary movements and ideas. Typically offered Spring.

### **ENGL 24300 - Introduction To Theories Of Rhetoric And Composition**

**Prerequisite(s):** (ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF D AND ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D) OR (ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF D AND ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D)

Credit Hours: 3.00. This course is intended to familiarize students with major theories of rhetoric, beginning with Aristotle and continuing to the present century, and to show how the profession of writing has developed historically. One-half the semester will be devoted to ideas of rhetoric and composition, and one-half will give students practice in applying these theories. Typically offered Summer Fall Spring.

### **ENGL 25000 - Great American Books**

**Prerequisite(s):** ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 22100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23000 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23700 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23800 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Selected works, such as *The Scarlett Letter*, *Moby Dick*, *Uncle Tom's Cabin*, *Walden*, *Huckleberry Finn*, *Absalom, Absalom!*, *Their Eyes Were Watching God*, *Native Son*, and *Beloved*, closely read and discussed as to their literary qualities and their cultural significance. Typically offered Fall Spring Summer.

### **ENGL 25700 - Literature Of Black America**

**Prerequisite(s):** ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 22100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23000 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23700 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23800 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A survey of literature written by black American authors. Close attention is paid to the history of

black literature and to the historical context in which it was written, as well as to the texts of major works by black writers. Typically offered Summer Fall Spring.

### **ENGL 26000 - Introduction To World Literature: To 1700**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A comparison of some of the major works of world literature in translation, from the beginnings to 1700. Emphasis on Greek, Roman, Eastern and early European literature. Typically offered Fall Spring Summer.

### **ENGL 26100 - Introduction To World Literature: Since 1700**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A comparison of some of the major works of world literature in translation, from 1700 to present. Emphasis on Continental, African, Latin-American and Eastern literature. Typically offered Fall Spring Summer.

### **ENGL 26200 - Greek And Roman Classics In Translation**

**Prerequisite(s):** ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 22100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23000 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23700 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23800 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Study of important works of Greek and Roman literature, their intrinsic literary values, and their influence on later European and American writing and thinking. Typically offered Summer Fall Spring.

### **ENGL 26400 - The Bible As Literature**

**Prerequisite(s):** ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 22100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23000 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23700 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23800 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A study of selections from the Old and New Testaments as examples of Hebrew and early Christian literature. Typically offered Summer Fall Spring.

### **ENGL 26600 - World Literature: From The Beginnings To 1700 A.D.**

**Prerequisite(s):** ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 22100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23000 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23700 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23800 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. (CMPL 26600) World literature in translation. A comparative and chronological survey of the masterpieces of Eastern and Western literature. Typically offered Summer Fall Spring. CCN: IEL 1250 World Literature 1

### **ENGL 26700 - World Literature: From 1700 A.D. To The Present**

**Prerequisite(s):** ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 22100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23000 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23700 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23800 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. (CMPL 26700) World literature in translation. A comparative and chronological survey of the

masterpieces of Eastern and Western literature. Typically offered Summer Fall Spring. CCN: IEL 1251 World Literature 2

### **ENGL 28600 - The Movies**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course is a comprehensive introduction to the aesthetics and history of movies. Students will learn how films are constructed, how they represent and challenge cultural and aesthetic values, and how they are produced and distributed. Typically offered Spring.

### **ENGL 30200 - Publications Design**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course focuses on the design, layout and production of various documents using personal computers. Emphasis is given to principles of publication design and page makeup, typography, and the use of personal computers in business publishing. Typically offered Fall Spring Summer.

### **ENGL 30400 - Advanced Composition**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Designed for students who wish additional training in composition beyond the basic requirements. Extensive practice in the writing of mature expository, critical, and argumentative prose. (The course satisfies the Indiana certification requirement of three hours of advanced composition.). Typically offered Fall Spring Summer.

### **ENGL 30502 - Creative Writing As A Profession**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An introduction to the industry practices of and for creative writers. Course will include introduction to various careers in and elements of publishing. Students will edit, design, and produce a student journal or similar publication. Typically offered Fall Spring Summer.

### **ENGL 30600 - Introduction To Professional Writing**

Credit Hours: 3.00. Development of skill in analyzing rhetorical situations in the workplace. Practice in planning, writing, evaluating, and revising a variety of documents typical of those used in the arts and industry. Typically offered Summer Fall Spring.

### **ENGL 30700 - Written And Oral Communication For Engineers**

**Prerequisite(s):** (ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C-) AND COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C- AND (CE 27500 FOR LEVEL UG WITH MIN. GRADE OF C- OR ECE 20200 FOR LEVEL UG WITH MIN. GRADE OF C- OR ME 27500 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 3.00. Course focuses on written and oral communication specifically for the environment, with special attention given to purpose, organization, audience analysis, and appropriate situational protocol. Written work emphasizes technical reports, technical descriptions, research skills, principles of document design, collaborative writing, and routine correspondence. Oral work emphasizes project presentations, conference planning and leadership, and small group dynamics. Typically offered Fall Spring Summer.

### **ENGL 30800 - Modern English Grammar**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An introduction to the study of traditional, structural, and generative-transformational analyses of English. Some attention to new directions in grammatical description and application. Typically offered Fall Spring Summer.

### **ENGL 30900 - Computer-Aided Publishing**

Credit Hours: 3.00. The development of the ability to write and design documents using electronic publishing technologies. Students will receive instruction in writing, graphics, and publishing software and will write, design, produce, and critique a number of publications. Typically offered Summer Fall Spring.

### **ENGL 31000 - Introduction To Popular Culture**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A survey of mass culture, popular arts and media, including literature (dime novels and westerns), art and architecture (magazine illustrators and prefabricated housing), radio-TV-film, and music (ballads, jazz, rock), from mid-nineteenth century through present day. When appropriate, field trips will be scheduled. Typically offered Fall Spring Summer.

### **ENGL 31100 - Identity In Ethnic American Women's Literature**

**Prerequisite(s):** ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 22100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23000 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23700 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23800 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An examination of how race, ethnicity, class, and gender influence the construction of female identity and self-worth. Also examined will be the role of the family, community, and media in either advancing or hindering female development. Typically offered Summer Fall Spring.

### **ENGL 31200 - Ethnic American Women Writers**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course explores works by women writers of various ethnic backgrounds living and writing in America during the last century. The emphasis is on ways in which a writer's ethnicity informs her writing and influences the content of her literary works. The major purpose is to introduce students to varied cultural voices in dialogue with American traditions as women writers express conflicting experiences within dual cultures. Typically offered Fall Spring Summer.

### **ENGL 31300 - African American Women's Fiction**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. African American Women's Fiction examines novels and short stories produced since the mid-nineteenth century, including works by Toni Morrison and Alice Walker, as well as Post-Reconstruction, Harlem Renaissance, modern and contemporary authors as Pauline Hopkins, Nella Larsen, Ann Petry, and Gloria Maylor. The course concentrates on African American women's fictional tradition, including critical theory. Typically offered Fall Spring Summer.

### **ENGL 31400 - Modern Poetry**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A study of poetry and poetic forms beginning with the 20th century. The course may examine major figures in North American, British, Continental, and Latin American traditions among others. Emphasis may include studies in prosody, major movements and major themes. Typically offered Fall Spring Summer.

### **ENGL 31500 - American Folklore And Folklife in the United States**

**Prerequisite(s):** ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course is an introduction to the study of Folklore and Folklife in the United States. The course content will include the basic concepts of oral traditions, customs, and material culture. Students will complete a semester project of collecting and analyzing some expression of Folklore and Folklife. Typically offered Fall Spring Summer.

### **ENGL 31800 - Graphic Narrative**

**Prerequisite(s):** ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 22100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23000 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23700 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23800 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course explores the history and aesthetics of graphic narrative. Readings to include a variety of graphic narrative works, with particular attention to the graphic novel, as well as critical and analytical resources such as Scott McCloud's *Understanding Comics*. Typically offered Summer Fall Spring.

### **ENGL 31900 - Creative Writing**

**Prerequisite(s):** ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An introduction to the writing of genres traditionally considered as creative, such as short stories, drama, poetry, and creative non-fiction. Workshop criticism. Typically offered Fall Spring Summer.

### **ENGL 32000 - By And About Women**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. (WOST 32000) Course employs feminist, interdisciplinary perspectives to examine representations of gender and sexuality in drama, fiction, poetry, and prose, with emphasis on texts by women writers. A central concern is how power is distributed across social locations such as gender, race, and class. Instructor will determine genre, era, place, culture, theme and other foci. Typically offered Fall Spring Summer.

### **ENGL 32300 - Sexual Identity In Literature**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course explores how sexual identity informs literary works. Fiction, poetry, drama, personal narrative, and essays from lesbian, bisexual, gay, and transgendered (LGBT) writers may be included. Typically offered Fall Spring.

### **ENGL 32400 - International Women's Literature**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. (WOST 32400) Course presents an international perspective on women's social, political, economic and imaginative lives. The major emphasis will be global literatures from Africa, the Americas, Asia and the Middle East. Typically offered Fall Spring Summer.

### **ENGL 32500 - International Short Story**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Course concentrates on an international selection of stories from both the Eastern and Western Hemispheres. Students will read, discuss and write about stories from Asia, Africa, the Americas and the Middle East, among other places. Typically offered Fall Spring Summer.

### **ENGL 32600 - English Linguistics**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An introduction to the nature and structure of language, as well as the study of dialects, semantics, and history of the language. Typically offered Fall Spring.

### **ENGL 32700 - English Language I: History And Development**

**Prerequisite(s):** ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Introduction to the history of the English language, its sounds, inflections, words, and sentence structures. Cultural and historical events affecting this history, and the interplay between language and literature. Typically offered Fall Spring.

### **ENGL 33100 - Medieval English Literature**

**Prerequisite(s):** ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 22100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23000 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23700 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23800 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A survey of Saxon and Medieval English literature (700-1500 A.D.) through intensive reading of Old English heroic, elegiac, and religious poetry and Middle English romance, allegory, lyric, and drama, exclusive of Chaucer. Typically offered Fall Spring Summer.

### **ENGL 33300 - Renaissance English Literature**

**Prerequisite(s):** ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A survey of Renaissance literature in England through an intensive reading of representative works. Typically offered Fall Spring.

### **ENGL 33500 - Restoration And Eighteenth-Century English Literature**

**Prerequisite(s):** ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A survey of Restoration and eighteenth-century literature through an intensive reading of representative works. Typically offered Fall.

### **ENGL 33600 - Mothers And Daughters In Literature**

Credit Hours: 3.00. (WOST 33600) Course acquaints students with a new body of literature by women. Students explore mother-daughter relationships as presented in this literature to enhance their understanding of feminist approaches to life. Typically offered Fall Spring Summer.

### **ENGL 33700 - Nineteenth-Century English Literature**

**Prerequisite(s):** ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 22100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23000 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23700 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23800 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A survey of Romantic and Victorian literature through an intensive reading of representative works by such authors as Wordsworth, Byron, Keats, Tennyson, Browning, and Arnold (the novel excluded). Typically offered Fall Spring.

### **ENGL 33900 - Twentieth-Century British Literature**

**Prerequisite(s):** ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 22100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23000 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23700 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23800 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Focuses on twentieth-century British literature, with attention given to major cultural and historical movements, canonical and emerging authors, various genres. Typically offered Fall Spring.

### **ENGL 34000 - Literature By Women Of Color**

**Prerequisite(s):** ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course focuses on literature written in English by women of color living in the United States. Writers included are of African-American, Native-American, Asian-American, and Latino/Hispanic decent. The course introduces students to the emerging body of writing by women of color, heightening awareness and appreciation of these women's literary contributions, ENGL 34000 examines some of the cultural differences among these groups, as reflected in the literature. The course also explores obstacles, particularly those related to race, gender, and class, that women of color share. Finally, the course enhances understanding of the experiences shared by women from all cultures. Typically offered Fall Spring Summer.

### **ENGL 35000 - Survey Of American Literature From Its Beginnings To 1865**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An introduction to American literature from the beginnings period to the Civil War. This course may treat significant minor writers in their relation to literary movements and ideas, and includes the work of minority writers. Works selected to reflect the diverse experiences of the U.S. population. Typically offered Fall.

### **ENGL 35100 - Survey Of American Literature From 1865 To The Post-World War II Period**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A continuation of ENGL35000, this course surveys American literature from the Civil War to recent times. The course may treat significant minor writers. Works selected to reflect the diverse experiences of the U.S. population. Typically offered Spring.

### **ENGL 35500 - African American Literature Slavery To 1940**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An examination of the literary, social, and historical significance of major works of fiction, drama, poetry, and nonfiction. The course begins during slavery, continues through the reconstruction and post-reconstruction periods, and finishes at the conclusion of the Harlem Renaissance. Readings will be explored, when appropriate, with attention to the influence of folklore and music. Typically offered Fall Spring Summer.

### **ENGL 35600 - American Humor**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Humorous writings of the nineteenth and twentieth centuries are studied as to form and technique and also as a reflection of American life. Special emphasis on Mark Twain. Typically offered Fall Spring.

### **ENGL 36000 - Gender And Literature**

**Prerequisite(s):** ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 22100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23000 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23700 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23800 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An introduction to feminist approaches to the study of literature, including poetry, drama, fiction, and/or autobiography. Examines how gender intersects with race, ethnicity, sexual orientation, and class in shaping authorship, reading, and representation. Typically offered Summer Fall Spring.

### **ENGL 36300 - African American Literature Slavery 1940 To Present**

Credit Hours: 3.00. A continuation of ENGL 35500, this course surveys major works of fiction, poetry, drama, and non-fiction from the 1940s and 1950s, through the Black Arts Era of the 1960s and 1970s, and up to the present. Readings will be explored, when appropriate, with attention to the influence of folklore and music. Typically offered Spring Summer.

### **ENGL 36500 - Literature And Imperialism**

**Prerequisite(s):** ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 22100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23000 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23700 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23800 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A study through cultural and theoretical works of the impact of imperialism on the ruling nations. Typically offered Fall Spring Summer.

### **ENGL 36600 - Postcolonial Literatures**

**Prerequisite(s):** ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 22100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23000 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23700 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23800 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A study of Third World Literature, film, and theory that emerged during and after Western rule. Typically offered Fall Spring Summer.

### **ENGL 37000 - Nineteenth-Century American Literature**

**Prerequisite(s):** ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 22100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23000 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23700 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23800 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Focuses on nineteenth-century American literature, with attention given to major cultural and historical movements, canonical and emerging authors, various genres. Typically offered Fall Spring.

### **ENGL 37100 - Twentieth-Century American Literature**

**Prerequisite(s):** ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 22100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23000 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23700 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23800 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Focuses on twentieth-century American literature, with attention given to major cultural and historical movements, canonical and emerging authors, various genres. Typically offered Fall Spring.

### **ENGL 37200 - American Folklore**

**Prerequisite(s):** ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 22100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23000 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23700 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23800 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The study of Anglo-American traditions: folk tale, song, dance, humor, superstition, games, beliefs, etc., with emphasis on informal discussion of readings, recordings, movies, and lectures. Typically offered Fall Spring.

### **ENGL 37300 - Science Fiction And Fantasy**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-



Credit Hours: 3.00. Representative works of science fiction and fantasy examined in relation to both mainstream and popular literature. Emphasis is on technique, theme, and form. Typically offered Summer Fall Spring.

### **ENGL 37500 - British Drama To 1800, Exclusive Of Shakespeare**

**Prerequisite(s):** ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 22100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23000 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23700 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23800 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A survey of major works of British drama from its medieval beginnings to 1800, including works by such authors as Marlowe, Jonson, Webster, Dryden, Congreve, and Sheridan. Typically offered Fall Spring.

### **ENGL 37700 - Major Modern Poetry**

**Prerequisite(s):** ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 22100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23000 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23700 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23800 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The development of new trends in, and the interrelationships among, the poetry of Ireland, Britain, and the United States. Poets central to modernism, such as Yeats, Pound, Eliot, Williams, and Stevens, will be emphasized, and students also will read more recent poets. Typically offered Summer Fall Spring.

### **ENGL 37900 - The Short Story**

**Prerequisite(s):** ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 22100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23000 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23700 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23800 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A historical and critical study of nineteenth- and twentieth-century short stories - Irish, British, American, and Continental. Typically offered Summer Fall Spring.

### **ENGL 38100 - The British Novel**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A survey of representative British novels from the eighteenth century to recent times. Typically offered Spring.

### **ENGL 38200 - The American Novel**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A survey of representative American novels of the nineteenth century to recent times. Typically offered Spring.

### **ENGL 38300 - Modern Drama: Ibsen To The Absurdist**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A survey of major works of Continental, English, and American drama. Typically offered Fall Spring, Summer.

### **ENGL 38600 - History Of Film To 1938**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A survey of the American and European cinema from its origins in technology and realism to the aesthetic implications presented by the coming of sound. Emphasis on the feature film and on the prevalent aesthetic attitudes in the first decades of the motion picture. Typically offered Fall Spring.

### **ENGL 38700 - History Of The Film From 1938 To The Present**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A survey of international cinema for the period indicated. Emphasis on the feature film and its development as a communication tool, popular art form, medium of personal expression, and self-exploring linguistic system. Typically offered Fall Spring.

### **ENGL 39000 - Practicum In Tutoring Writing**

Credit Hours: 2.00. A practicum to teach undergraduates to teach writing in the one-to-one setting of a writing lab. Typically offered Fall Spring.

### **ENGL 39100 - Composition For English Teachers**

**Prerequisite(s):** ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Required for English Teaching majors. Intensive practice in writing exposition and in annotating high school students' compositions. This course involves equal amounts of theory and practice in developing writing assignments, responding to student writing, supporting students as they write, and classroom strategies for teaching composition. Typically offered Fall.

### **ENGL 39600 - Studies In Literature And Language**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A course in the study of a special topic directed by an instructor in whose particular field of specialization the content of the course falls. Typically offered Summer Fall Spring.

### **ENGL 40000 - Creative Non-Fiction Writing**

**Prerequisite(s):** ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Study of creative nonfiction sub-genres and techniques. Practice in the craft of short creative nonfiction writing. Workshop environment. Instructor permission required. Typically offered Fall Spring Summer.

### **ENGL 40300 - Literary Theory**

**Prerequisite(s):** ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- AND ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This seminar addresses three major concerns in the study of literature: the problem and the possibility of theory; the problems of canon, form and genre; and the problems of meaning and significance. Typically offered Fall Spring Summer.

### **ENGL 40400 - Web Page Design**

Credit Hours: 3.00. Provides students with a theoretical understanding of and practical training in developing Web sites. Students will learn the basics of HTML, and working with Java and Javascript. Emphasis is on analysing real-world contexts (e.g., promotional, informational, instructional) and users of Web sites while authoring texts that meet these needs. Typically offered Fall Spring Summer.

### **ENGL 40600 - Review Writing**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Intensive practice in the writing of book, film, and theatre criticism, as well as reviews of musical programs and art exhibits. Readings in critics to serve as possible models. Audience analysis of newspapers and periodicals that would be potential markets. Typically offered Fall Spring.

### **ENGL 40700 - Introduction To Poetry Writing**

**Prerequisite(s):** (ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- AND ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF D- AND ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D-) AND ENGL 20500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Study of basic methods of composing poetry, with primary emphasis on the student's own work, submitted frequently during the semesters. Workshop criticism. Typically offered Summer Fall Spring.

### **ENGL 40900 - Introduction To Fiction Writing**

**Prerequisite(s):** (ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- AND ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF D- AND ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D-) AND ENGL 20500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Writing of several short fictional narratives. Study of short story techniques in published stories and student manuscripts. Workshop criticism. Typically offered Summer Fall Spring.

### **ENGL 41000 - Introduction To Creative Nonfiction Writing**

**Prerequisite(s):** (ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- AND ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF D- AND ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D-) AND ENGL 20500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Writing of several short works of creative nonfiction. Study of creative nonfiction techniques in published texts and student manuscripts. Workshop criticism. Typically offered Fall Spring Summer.

### **ENGL 41010 - Virtual Worlds**

**Prerequisite(s):** ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course provides students with an opportunity to live/work for one semester as an avatar in a virtual world. During this time, students will become part of different inworld communities, produce an ongoing research project that documents their experiences, and transform/repurpose that experience into a 3-D virtual learning space. Additionally, students will acquire skills in building, scripting, and creating machinima. Typically offered Fall Spring Summer.

### **ENGL 41100 - Studies In Major Authors**

**Prerequisite(s):** (ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-) AND ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A study of the literary, critical, or cinematic works of one or two influential authors or directors. May be repeated for credit only with a different topic. Typically offered Fall Spring Summer.

### **ENGL 41101 - Introduction To Writing In The Health Sciences**

**Prerequisite(s):** ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. (COM 41101). This course provides an introduction to four areas of writing in the health sciences: Patient education materials, pharmaceutical documentation, medical editing, and medical journalism. The course will involve lectures, guest speakers, team work, and a real world project. Typically offered Fall Spring Summer.

### **ENGL 41200 - Studies In Genre**

**Prerequisite(s):** (ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-) AND ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A study of literary or cinematic works that share distinctive formal features. May be repeated for credit only with a different topic. Typically offered Summer Fall Spring.

### **ENGL 41300 - Studies In Literature And History**

**Prerequisite(s):** (ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-) AND ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A study of literature or film produced during a particular well-defined historical period from the point of view of its social, political, religious, and economic contexts. May be repeated for credit only with a different topic. Typically offered Summer Fall Spring.

### **ENGL 41400 - Studies In Literature And Culture**

**Prerequisite(s):** (ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-) AND ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A study of literature or film from the perspective of the cultural norms and values it expresses, celebrates, challenges, and imaginatively opposes. May be repeated for credit only with a different topic. Typically offered Summer Fall Spring.

### **ENGL 41700 - Peer Mentoring Of International Students**

Credit Hours: 3.00. Instruction on intercultural awareness, mentorship, leadership, and education. Daily interactions with peer international students enrolled in the English Language Program. Permission of department required. Typically offered Fall.

### **ENGL 41800 - Short Fiction Writing**

**Prerequisite(s):** ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Study of short techniques and practice in the craft of short story literary fiction writing. Workshop environment. Typically offered Fall Spring Summer.

### **ENGL 41900 - Multimedia Writing**

**Prerequisite(s):** (ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF D AND ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D) OR (ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF D AND ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D)

Credit Hours: 3.00. Multimedia writing for networked contexts. Emphasizes principles, and practices of multimedia design, implementation, and publishing. Typical genres include Web sites, interactive media, digital video, visual presentations, visual argument, and user documentation. Typically offered Summer Fall Spring.

### **ENGL 42000 - Business Writing**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Workplace writing in networked environments for management contexts. Emphasizes organizational context, project planning, document management, ethics, research, team writing. Typical genres include management memos, reports, letters, e-mail, resumes (print and online), oral presentations. Typically offered Summer Fall Spring.

### **ENGL 42001 - Careers In English**

**Prerequisite(s):** ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 20500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Each student will complete an experiential, supervised internship in an English-related field, or a substantial writing project related to his or her professional goals. Permission of Instructor required. Typically offered Spring.

### **ENGL 42100 - Technical Writing**

**Prerequisite(s):** (ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF D AND ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D) OR (ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF D AND ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D)

Credit Hours: 3.00. Workplace writing in networked environments for technical contexts. Emphasizes context and user analysis, data analysis/display, project planning, document management, usability, ethics, research, team writing. Typical genres include technical reports, memos, documentation, Web sites. Typically offered Fall Spring Summer.

### **ENGL 42300 - Writing Computer Documentation Manuals**

**Prerequisite(s):** ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 22000 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Designed to teach the student how to create software documentation, using contemporary management methods and the state-of-the-art capabilities of the personal computer. Typically offered Fall Spring Summer.

### **ENGL 42501 - Writing For New Media**

Credit Hours: 3.00. Course invites students to explore the emergence of new media (primarily online, interactive digital media) both in theory and in practical production terms as writers; students will examine how researchers define new media and experiment with repurposing traditional forms of print media to meet these challenges. Topics will include participatory culture, convergence theory, knowledge communities, transmedia production, among others. Typically offered Fall Spring Summer.

### **ENGL 42600 - Discourse Communities In Professional Writing**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Course examines business and technical writers as two separate, yet related, discourse communities and explores to what extent various influences, such as classical rhetoric, modern discourse theory, cognitive psychology, and organizational climate, may shape how members of these communities define, think about, and practice the art of writing. Class will explore how these theoretical approaches may account for interactions between writer, audience, text and subject matter. Typically offered Fall Spring Summer.

### **ENGL 42601 - Writing For Social Media**

**Prerequisite(s):** ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course will introduce student's to the contexts and forms of social media, including Facebook, Twitter, YouTube, Instagram, Pinterest, among others. Student will become familiar with a range of social media tools, analyze and discuss their uses and implications, understand the writer's role in creating social media, and create various projects in different media centered around social media. This course will provide the tools and experience to successfully utilize social media for strategic endeavors. Typically offered Fall Spring Summer.

### **ENGL 42700 - Senior Writing Project**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Course consists of a research and writing project in professional writing. Such a project should be a culmination of student coursework in professional writing, including the internship or supervised writing. As determined by the instructor in consultation with the student, projects may be in technical writing, business or industrial report writing, technical or scientific journalism, or literary journalism. Individual conferences only; no class meetings. Typically offered Fall Spring Summer.

### **ENGL 42800 - Special Topics In Writing**

Credit Hours: 3.00. A course in the study of a special topic directed by an instructor in whose particular field of specialization the content of the course falls. Sample topics include writing in the medical field, writing and technology, or publicity and promotional writing. Typically offered Fall Spring.

### **ENGL 42900 - Supervised Writing**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Special writing projects for students in the Writing Option. Individual conferences only; no class meeting. Typically offered Fall Spring Summer.

### **ENGL 43000 - Professional Copy Editing**

Credit Hours: 3.00. This course offers practice in the skills associated with copy editing including editing for grammar, word usage, and publishing style. Students will also learn about fact checking, page layout/design, and the reference books commonly used by copy editors. Typically offered Summer Fall Spring.

### **ENGL 43100 - Web Usability: Writing And Reading On The Web**

Credit Hours: 3.00. This course assists students in writing effective Web-based content and understanding how to make Web sites usable. Course examines how users interact with Web sites, how/when sites are successful, and how/when they are not. Students will learn how to write effective online content for Web and Intranets/Extranets, understand usability issues, and conduct user testing of Web sites. Typically offered Summer Fall Spring.

### **ENGL 43500 - Topics In Writing For Interactive Digital Media**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Focuses on examining a specific topic related to writing for interactive digital media. Sample topics include writing for Web-based shared or social media, such as blogs, wikis, and social networks, editing online content, or digital storytelling, among others. Specific attention paid to applications and examples in the areas of education, business, and entertainment. Typically offered Summer Fall Spring.

### **ENGL 43600 - Writing For Informational Interactive Media**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Provides an introduction to writing for informational interactive media. Material presented includes: the role of the interactive writer, thinking interactively, interactive structure, script format and the special challenges of presenting information interactively. We will study sample informational interactive programs and scripts including: e-learning, educational and reference CDs and DVDs, and multimedia exhibits, among others. Students will create an original design proposal for an informational interactive application with flowchart, script, and treatment. Typically offered Summer Fall Spring.

### **ENGL 43700 - Writing For Video Games**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Provides an introduction to writing for narrative interactive media. Material presented includes: the role of the interactive writer, thinking interactively, interactive structure, script format, digital storytelling and the special challenges of presenting information interactively. We will study sample narrative interactive programs and scripts including computer/video games, simulations, and worlds, among others. Students will create an original design proposal for a narrative interactive application with flowchart, script, and treatment. Typically offered Summer Fall Spring.

### **ENGL 44100 - Chaucer's Canterbury Tales**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Critical reading of The Canterbury Tales in Middle English, with attention to the literary and cultural background. Typically offered Fall Spring.

### **ENGL 44200 - Shakespeare**

**Prerequisite(s):** (ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-) AND ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Shakespeare's dramatic craftsmanship, poetry, humor, characterization, psychology, and modern pertinence illustrated in representative tragedies, comedies, and history plays. Typically offered Summer Fall Spring.

### **ENGL 44400 - Milton**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An in-depth study of Milton's work, including some of his early lyric poems, prose, and major works-Paradise Lost, Paradise Regained, and Samson Agonistes. Typically offered Summer Fall Spring.

### **ENGL 45100 - Feature Writing**

**Prerequisite(s):** COM 25500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. (COM 45100) Examination of magazine staff organization, market analysis, and editorial consent. Study of, and practice in, the writing of a variety of nonfiction materials. Emphasis is on the adaptation of topics and presentation of editorial policies and reader groups. Typically offered Summer Fall Spring.

### **ENGL 45500 - Main Currents Of American Thought**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A survey of dominant ideas and intellectual trends in America from 1607 to the present as revealed through American literature and as related to American life and culture. Typically offered Fall Spring Summer.

### **ENGL 46000 - Studies In Women's Literature**

**Prerequisite(s):** ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 22100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23000 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23700 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23800 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A study of literary works by women according to a specific theme, historical period, genre, or culture, e.g., Nineteenth-Century Women Novelists, Madness in Women's Writing, Caribbean Women Writers. May be repeated only with different topic. Typically offered Fall Spring Summer.

### **ENGL 46200 - The Bible As Literature: The Old Testament**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A study of the Old Testament - Pentateuch, Prophets, and other books such as Psalms, Proverbs, Job, and Ecclesiastes - with emphasis on its unique literary characteristics. Typically offered Fall Spring.

### **ENGL 46300 - The Bible As Literature: The New Testament**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A study of the New Testament, with emphasis on its unique literary characteristics. Typically offered Fall Spring.

### **ENGL 46600 - Cultural Encounters**

**Prerequisite(s):** ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 22100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23000 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23700 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23800 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A study of cross-cultural works that address the encounters of the First and the Third worlds and the subsequent reshaping of history and culture in both contexts. Typically offered Fall Spring Summer.

### **ENGL 46800 - Problems In The History Of Criticism**

**Prerequisite(s):** ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 22100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23000 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23700 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23800 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Introduction to the history of literary criticism and theory through study of selected key terms, debates, figures, and texts. Concentration on such topics as representation, authorship, literary form, and interpretation. Typically offered Fall Spring.

### **ENGL 46900 - Issues In Contemporary Criticism And Theory**

**Prerequisite(s):** ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 22100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23000 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23100 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23500 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23700 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23800 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 23900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Study of recent critical movements and texts. Emphasis on methods of literary analysis, including philosophical, cultural, and formalist approaches. Discussion of, for example, structuralist, psychoanalytic, feminist,

Marxist, poststructuralist, and emerging non-Western critical schools. The teaching schedule may incorporate screening time. Typically offered Fall Spring.

### **ENGL 47000 - Theories Of Rhetoric And Composition**

**Prerequisite(s):** (ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF D AND ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D) OR (ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF D AND ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D) AND (ENGL 20400 FOR LEVEL UG WITH MIN. GRADE OF D OR ENGL 30400 FOR LEVEL UG WITH MIN. GRADE OF D OR ENGL 39100 FOR LEVEL UG WITH MIN. GRADE OF D OR ENGL 40500 FOR LEVEL UG WITH MIN. GRADE OF D OR ENGL 42000 FOR LEVEL UG WITH MIN. GRADE OF D OR ENGL 42100 FOR LEVEL UG WITH MIN. GRADE OF D OR COM 25200 FOR LEVEL UG WITH MIN. GRADE OF D OR COM 30000 FOR LEVEL UG WITH MIN. GRADE OF D OR COM 35800 FOR LEVEL UG WITH MIN. GRADE OF D OR COM 49000 FOR LEVEL UG WITH MIN. GRADE OF D)

Credit Hours: 3.00. A general introduction to the field of rhetoric and composition. Overview of studies in written discourse, including studies of the processes and contexts of written discourse as well as methods of research in the field. Typically offered Fall Spring.

### **ENGL 47900 - The Short Story**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An historical and critical study of nineteenth and twentieth century short stories: Irish, British, American, Continental. Typically offered Fall Spring Summer.

### **ENGL 48000 - Internship In Writing**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Assigned internships in business, industrial and other professional situations. Typically offered Fall Spring Summer.

### **ENGL 48800 - Internship In Professional Writing**

Credit Hours: 3.00 to 6.00. This course provides on-the-job experience in various kinds of professional writing, combined with a seminar in applied rhetoric. Students work in selected internship settings, participate in seminar discussions of their work, and read selections appropriate to their internship. Permission of instructor required. Typically offered Summer Fall Spring.

### **ENGL 49101 - Special Topics In English Language And Literature**

**Prerequisite(s):** ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Each time the course is taught, it will focus on a topic that is not currently offered in the catalogue. Typically offered Fall Spring Summer.

### **ENGL 49200 - Literature In The Secondary Schools**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Exploration of the theory, research and pedagogy supporting the teaching of literature at the secondary level. Topics include text selection, instructional strategies, adolescent literacy, student engagement and the use of alternative texts. Typically offered Fall Spring Summer.

### **ENGL 49500 - Capstone Seminar For Seniors**

**Prerequisite(s):** ENGL 20100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This seminar trains senior English majors in advanced research and writing in the field of English. Students complete a substantial research project, on a topic of their interest chosen in consultation with the instructor, that demonstrates the skills and knowledge they have gained through their coursework in the English major. Permission of department required. Typically offered Fall.

### **ENGL 50100 - Introduction To English Studies**

Credit Hours: 3.00. Introduction to graduate studies in English with special emphasis on research and reference tools, methods of bibliography, and the writing of scholarly papers. Prerequisite: Fulfillment of the basic composition requirement and 6 credit hours in English. Typically offered Fall Spring.

### **ENGL 50200 - Practicum In Teaching College Composition**



Credit Hours: 1.00. Reading professional literature, preparing syllabi; evaluating student papers, leading discussions. Required of all teaching assistants in their initial semesters. Typically offered Fall Spring.

### **ENGL 50400 - Practicum In The Teaching Of English Composition I**

Credit Hours: 3.00. Prepares new graduate aides in the Department of English and Philosophy to teach freshman English. Orients new graduate aides to issues in college and provides practice in applications of those issues. This course is not, however, part of the master's degree requirement. Typically offered Fall Spring.

### **ENGL 50600 - Introduction To English And General Linguistics**

Credit Hours: 3.00. General study of language and linguistic theory with emphasis on English. Problems and methods in phonology, morphology, syntax, and semantics. Current techniques of linguistics analysis. Typically offered Fall Spring.

### **ENGL 50900 - Fiction Writing**

Credit Hours: 3.00. Study of the techniques of writing short stories. Workshop. Typically offered Fall Spring Summer.

### **ENGL 51000 - History Of The English Language**

**Prerequisite(s):** ENGL 50600 FOR LEVEL GR WITH MIN. GRADE OF B- OR AUSL 53000 FOR LEVEL GR WITH MIN. GRADE OF B-

Credit Hours: 3.00. Introduction to theories of linguistic change and their application to the historical development of English from its beginnings. Typically offered Fall Spring Summer.

### **ENGL 51200 - English Syntax And Syntactic Theory**

**Prerequisite(s):** ENGL 50600 FOR LEVEL GR WITH MIN. GRADE OF B- OR AUSL 58000 FOR LEVEL GR WITH MIN. GRADE OF B-

Credit Hours: 3.00. Introduction to English syntactic structure, syntactic argumentation, and syntactic theory. Emphasis on one current theory as the primary theoretical framework, with other theories considered. Typically offered Fall Spring Summer.

### **ENGL 51600 - Teaching English As A Second Language: Theoretical Foundations**

Credit Hours: 3.00. Survey of theories of learning and teaching English as a second/foreign/international language. Focus is on current theories and their implications for practice. Typically offered Fall Spring.

### **ENGL 51800 - Teaching English As A Second Language: Principles And Practices**

Credit Hours: 3.00. Studies of issues and principles in ESL/EFL program development. Emphasis is on practical application of theory in a variety of English learning and teaching contexts in the U.S. and abroad. Typically offered Fall Spring.

### **ENGL 52900 - Language Study For Educators**

Credit Hours: 3.00. (EDCI 52600). Covers foundational knowledge in language and linguistics for teachers and educational researchers. Topics include structure and functions of language, language acquisition and development, language diversity, classroom discourse, language and media, and literacy-language arts curriculum. A foundation for work in Literacy and Language Education. Typically offered Summer Spring.

### **ENGL 53100 - The Rise Of The Novel**

Credit Hours: 3.00. A study of the history and theory of the emergent novel genre as it developed in 18th-century Britain and/or America. Typically offered Summer Fall Spring.

### **ENGL 53200 - The English Novel In The Nineteenth Century**

Credit Hours: 3.00. A survey of fiction up to about 1880, including such novelists as Scott, Dickens, Thackeray, the Brontes, Eliot, and Meredith. Typically offered Spring.

### **ENGL 53400 - Seventeenth-Century Literature**

Credit Hours: 3.00. Nondramatic literature from 1603 to 1660. Particular emphasis upon such figures as Jonson, Donne, Marvell, and Herbert, with representative prose from Bacon, Browne, Burton, and others. Typically offered Spring.

### **ENGL 53500 - Restoration And Early Eighteenth-Century Literature**

Credit Hours: 3.00. A survey of nondramatic literature from 1660 to 1744, from Clarendon through Thomson. Emphasizes Bunyan, Dryden, Pope, and Swift. Typically offered Fall.

### **ENGL 53700 - Drama In Early Modern England**

Credit Hours: 3.00. Analysis of plays by Marlowe, Jonson, Middleton, Webster, and others with attention to poetics, dramatic structure, and recent critical and cultural theory. Typically offered Fall.

### **ENGL 54100 - Studies In Chaucer's Canterbury Tales**

Credit Hours: 3.00. Critical reading of The Canterbury Tales and related works in Middle English, with attention to the literary and cultural background and to secondary studies. Typically offered Spring.

### **ENGL 54200 - Shakespeare's Dramatic Art**

Credit Hours: 3.00. Analysis of Shakespeare's plays within the dramatic tradition of comedy, tragedy, history, and romance. Consideration of matters such as poetics, dramatic structure and conventions, and textual problems. Typically offered Fall.

### **ENGL 54300 - Shakespeare In Critical Perspective**

Credit Hours: 3.00. Shakespeare's plays read in context of historical and contemporary literary theory and criticism, considering such issues and approaches as structuralism, Marxism, deconstruction, new historicism, colonialism, sexuality, race, and gender. Typically offered Spring.

### **ENGL 54400 - Milton**

Credit Hours: 3.00. A study of Milton's poetry and prose, with particular emphasis on *Paradise Lost*, and some attention to the social, political, and literary background. Typically offered Fall.

### **ENGL 54700 - British Romanticism**

Credit Hours: 3.00. Readings from among the works of the High Romantics and other figures; discussion of historical, philosophical, cultural debates of the era, with attention to current critical and theoretical developments in the field. Typically offered Fall.

### **ENGL 54800 - Victorian Literature**

Credit Hours: 3.00. A study of selected English poetry and prose, largely nonfiction, from circa 1830-1900. Includes readings from such figures as Arnold, Barrett, Bronte, Browning, Carlyle, Mill, Rossetti, Ruskin, and Tennyson. Typically offered Spring.

### **ENGL 54900 - Late Victorian And Edwardian Literature**

Credit Hours: 3.00. A study of the rebellion against Victorian conventions that characterized the period from 1880 to 1910. Such movements as aestheticism, decadence, symbolism, and naturalism are examined in the works of such writers as Conrad, Dowson, Hardy, Mansfield, Schreiner, Wilde, and Yeats. Typically offered Spring.

### **ENGL 55400 - American Literary Culture 1820-1860**

Credit Hours: 3.00. Emphasizes cultural inventory, definition, and production in early nineteenth-century literary culture. The approach is intertextual, moving back and forth between the emerging culture and literary productions, and between one author and other authors. Typically offered Spring.

### **ENGL 55800 - American Literature In The Later Nineteenth Century**

Credit Hours: 3.00. Study of American literature from about 1865 to 1900. Addresses realism, regionalism, naturalism, and other related movements. Focuses on such writers as Whitman, Dickinson, Stowe, Davis, Stoddard, Alcott, Twain, Howells, James, Jewett, Chopin, Crane, Chesnutt, and Norris. Typically offered Fall.

### **ENGL 57800 - Early Twentieth-Century American Fiction**

Credit Hours: 3.00. Study of American fiction from about 1900 to 1945. Addresses naturalism, social realism, modernism, and related movements, and such writers as Dreiser, Wharton, Stein, Lewis, Toomer, Cather, Fitzgerald, Hemingway, Glasgow, Roth, Dos Passos, Miller, Faulkner, Hurston, Wright, and Welty. Typically offered Fall Spring.

### **ENGL 57900 - Modern British Fiction**

Credit Hours: 3.00. Critical study of twentieth-century novels, mainly before World War II, by such writers as Conrad, Lawrence, Forster, Joyce, and Woolf. Typically offered Fall Spring.

### **ENGL 58000 - Theories Of Modernity And Postmodernity**

Credit Hours: 3.00. Exploration of theories and models of modernity and postmodernity, with emphasis on cultural and critical issues. Typically offered Fall.

### **ENGL 58200 - Adopting Composition Theory Into Practice, Northwest Indiana Writing Project Institute**

Credit Hours: 3.00. In-depth examination into various theories surrounding the teaching of writing and the adoption of those theories to actual classroom practice. Typically offered Summer.

### **ENGL 58501 - Assessment Of Written Texts**

Credit Hours: 3.00. In-depth examination into the various theories surrounding the assessment of written texts, with an emphasis on student texts. Typically offered Spring.

### **ENGL 58900 - Directed Writing**

Credit Hours: 1.00 to 3.00. Writing (creative, popularly technical, biographical, historical, philosophical) on subjects of the student's choice. Individual conferences only; no class meetings. Permission of instructor required. Typically offered Fall Spring Summer.

### **ENGL 59000 - Directed Reading**

Credit Hours: 1.00 to 3.00. Directs the reading of students with special interests. Guides students in profitable reading in subjects of their own choice. Individual conferences; no class meetings. Permission of instructor required. Typically offered Fall Spring Summer.

### **ENGL 59100 - Introduction To Composition Theory**

Credit Hours: 3.00. A survey of major contemporary theories of invention and style, including such topics as heuristics; the aims and modes of discourse; stylistics; readability theories; sentence-combining; error analysis; audience; and evaluation. Applications to teaching will be made. Typically offered Fall.

**ENGL 59300 - Contemporary British Fiction**

Credit Hours: 3.00. Critical study of the British novel since World War II. Survey of scholarship and criticism. Typically offered Fall.

**ENGL 59500 - Contemporary American Fiction**

Credit Hours: 3.00. Intensive study of contemporary and postmodern American fiction within various formal, theoretical, and cultural contexts, including multiculturalism, poststructuralism, and gender analysis, among others. Typically offered Fall.

**ENGL 59600 - Advanced Studies In Literature Or Language**

Credit Hours: 3.00. Advanced study of a topic within the instructor's fields of specialization. Emphasis on scholarly analysis and research. Typically offered Fall Spring.

**ENGL 59700 - Contemporary Black Feminist Literature**

Credit Hours: 3.00. An intense examination of recent literary works by black women along with various critical theories constructed about black women's literature, beginning with the premise that black feminism is a "sign to be interrogated, a locus of contradictions.". Typically offered Fall Spring.

**ENGL 60200 - Introduction To Literary Methods**

Credit Hours: 3.00. Introduction to the methods of literary study, including investigation of significant critical modes, bibliographic techniques, and research paper writing. Typically offered Fall.

**ENGL 60500 - Computers In Language And Rhetoric**

Credit Hours: 3.00. Seminar that investigates how computers figure in contemporary theories of text and text making. Typical topics: critiques of technology, hypertext, cyberspace, computer-mediated communication, Internet, electronic writing, online research, pedagogy, and publishing. Typically offered Fall.

**ENGL 60600 - Seminar In Poetry Writing**

Credit Hours: 3.00. An advanced course in the writing of poetry. Workshop criticism. Study of the work of established writers. Prerequisite: admission to the MA program in creative writing. Typically offered Fall Spring.

**ENGL 60900 - Seminar In Fiction Writing**

Credit Hours: 3.00. An advanced course in the writing of fiction. Workshop critiques. Prerequisite: Admission to the creative writing program. Typically offered Fall Spring.

**ENGL 67200 - Seminar In Women's Literature And Feminist Theory**

Credit Hours: 3.00. A variable topic course investigating gender as a category of analysis. Intensive study of one or two women authors, of a particular genre or period, or of a critical issue relevant to women's literature and/or feminist theory. Typically offered Fall Spring.

**ENGL 68000 - Seminar In Rhetoric And Composition**

**Prerequisite(s):** ENGL 59100 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. A variable content course dealing with topics such as cultural studies and composition, medieval rhetoric, renaissance rhetoric, literacy, historiographies of rhetoric, qualitative studies, and professional writing theory. Prerequisite: ENGL 59100. Typically offered Fall Spring.

**ENGL 69100 - Seminar In The English Language Arts**

Credit Hours: 3.00. (EDCI 61300) Problems in the teaching of English: literature, language, rhetoric. Attention to recent scholarship and to its application in the public schools. Typically offered Spring.

**ENGL 69600 - Seminar In Literature**

Credit Hours: 3.00. Advanced study of special subjects. Typically offered Fall Spring Summer.

**ENGL 69800 - Research MA Or MFA Thesis**

Credit Hours: 1.00 to 18.00. Research MA Or MFA Thesis. Permission of instructor required. Typically offered Summer Fall Spring.

**Engineering****ENGR 10000 - First-Year Engineering Lectures**

Credit Hours: 1.00. An introduction to the engineering profession. Typically offered Fall Spring.

**ENGR 12600 - Engineering Problem Solving and Computer Tools**

Credit Hours: 3.00. Introduction to the solving of open-ended engineering problems and the use of computer software, including UNIX™, computer communications, spreadsheets, and MATLAB. Explicit model-development activities are utilized, and students are expected to develop skill at working in teams. This is emphasized both in laboratories and on projects. Typically offered Summer Fall Spring.

**ENGR 15100 - Software Tools For Engineers**

**Prerequisite(s):** MA 15900 FOR LEVEL UG WITH MIN. GRADE OF C- OR MA 15400 FOR LEVEL UG WITH MIN. GRADE OF C- OR APPL FOR MIN. SCORE OF 085

Credit Hours: 3.00. Introduction to MATLAB and engineering problem solving with MATLAB. Students will be

introduced to arrays, relational and logical operations, control flow of sequence, selection and repetition, function definition, 2-D and 3-D graphics, data analysis, Graphical User Interface (GUI) development and Simulink. Typically offered Fall Spring.

### **ENGR 17100 - Engineering Fundamentals I**

**Prerequisite(s):** MA 16700 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 5.00. An introduction to approaches and techniques for solving engineering problems. Software tools are introduced and used for solving engineering case studies. Engineering report writing is included. Presentation techniques are also demonstrated. In the laboratory, students use various software packages to solve real-world problems. Typically offered Summer Fall Spring.

### **ENGR 18100 - Engineering Fundamentals II**

**Prerequisite(s):** ENGR 17100 FOR LEVEL UG WITH MIN. GRADE OF D- AND MA 16900 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 5.00. A more advanced approach to engineering problem solving. More in-depth use is made of programming and applications software. Students work in teams to perform real-world case studies, using several programming languages and software packages. Numerous oral and written presentations are required. Typically offered Summer Fall Spring.

### **ENGR 18600 - First Year Seminar For Engineers**

Credit Hours: 1.00. The course will provide the foundations for students enabling them to: learn to succeed, work together in teams, understand the field chosen for study, and orient to the University life and environs. Typically offered Summer Fall Spring.

### **ENGR 18900 - C++ Language Programming For Engineering and Technology Applications**

**Prerequisite(s):** MA 1110 FOR LEVEL UG WITH MIN. GRADE OF C OR (MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C OR MA 15400 FOR LEVEL UG WITH MIN. GRADE OF C OR MA 16700 FOR LEVEL UG WITH MIN. GRADE OF C OR MA 22300 FOR LEVEL UG WITH MIN. GRADE OF D)

Credit Hours: 3.00. An introduction to "C++" language programming. Course topics include data types, control flow, operators and expressions. Applications to engineering and technology.. Typically offered Summer Fall Spring.

### **ENGR 19000 - Elementary Engineering Design**

**Prerequisite(s):** MA 15900 FOR LEVEL UG WITH MIN. GRADE OF C- OR MA 15400 FOR LEVEL UG WITH MIN. GRADE OF C- OR APPL FOR MIN. SCORE OF 085

Credit Hours: 2.00. An introduction to engineering design. Typically offered Fall Spring Summer.

### **ENGR 19500 - First-Year Engineering Projects**

Credit Hours: 1.00 to 3.00. Topics vary. Permission of instructor required. Typically offered Summer Fall Spring.

### **ENGR 22000 - Introductory Engineering III**

**Prerequisite(s):** ENGR 16000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 1.00. Continuation of ENGR 160. Further lectures on the engineering profession and a continuation of computer programming design and implementation. Emphasis on engineering applications. Typically offered Fall Spring Summer.

### **ENGR 45000 - Engineering Analysis**

**Prerequisite(s):** MA 26200 FOR LEVEL UG WITH MIN. GRADE OF D- AND ENGR 17100 FOR LEVEL UG WITH MIN. GRADE OF D- AND ENGR 18100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Preparation for the senior design project course, ENGR 46100. Case studies are used to examine how a major project is accomplished, from start to finish. Ways to avoid and/or correct design problems are examined. Typically offered Summer Fall Spring.

### **ENGR 45100 - Engineering Analysis II**

**Prerequisite(s):** ENGR 45000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Advanced engineering methods and applied math to prepare students for the senior design project course, ENGR 46100. The course will focus on numerical techniques in engineering analysis including finite element analysis, finite difference analysis, quadrature and more. Typically offered Fall Spring Summer.

### **ENGR 46100 - Engineering Design Experience**

**Prerequisite(s):** ENGR 17100 FOR LEVEL UG WITH MIN. GRADE OF D- AND ENGR 18100 FOR LEVEL UG WITH MIN. GRADE OF D- AND ENGR 45000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Capstone project course, designed to integrate the various subjects the student has studied. Both individual and group project formats may be used. An oral presentation and written project report is required at the end of the semester. Typically offered Summer Fall Spring.

### **ENGR 49900 - Engineering**

Credit Hours: 1.00 to 9.00. Hours and subject matter to be arranged by staff. Typically offered Fall Spring Summer.

## **Entomology**

### **ENTM 20600 - General Entomology**

Credit Hours: 2.00. A general course on insect structure, function, biology, ecology and population management. Coordinated with the ENTM 20700 laboratory as an introductory course in entomology. Typically offered Fall Spring.

### **ENTM 20700 - General Entomology Laboratory**

Credit Hours: 1.00. Laboratory exercises parallel topics presented in ENTM 20600. Insect structures and function are studied as a basis for learning to identify insects and other arthropods. Typically offered Fall Spring.

### **ENTM 20800 - Insects Of Field And Forage Crops Laboratory**

Credit Hours: 1.00. Laboratory experiences focus on recognition, biology, and management of economically important insects of field and forage crops. Typically offered Fall Spring.

### **ENTM 20900 - Insects Of Livestock And Companion Animal Laboratory**

Credit Hours: 1.00. Laboratory experiences focus on recognition, biology, and management of economically important insects of domestic animals. Typically offered Spring.

### **ENTM 21700 - Insects In Elementary Education**

Credit Hours: 1.00. A laboratory class designed for students preparing for a career in elementary education. Students will learn to use insects in the classroom as learning tools to achieve educational objectives relevant to their intended grade level. Enrollment should be limited to elementary and secondary education majors. Typically offered Fall Spring.

### **ENTM 31700 - Insects in Agricultural Education**

Credit Hours: 1.00. This course is designed for students preparing for a career in agricultural education. Students will learn to use insects in the classroom as learning tools to achieve educational objectives relevant to middle school and secondary schools. Course meets during weeks 1-5. Typically offered Spring.

## **Entrepreneur**

### **ENTR 10000 - Introduction To Entrepreneurship**

Credit Hours: 3.00. Basic business skills are surveyed and case studies of successful entrepreneurs will be studied to develop a broad understanding of this important force in the economy. Guest speakers and selected readings will introduce the student to the scope of opportunities that exist for entrepreneurs. Typically offered Fall Spring.

### **ENTR 10100 - Entrepreneurship In Arts And Design**

Credit Hours: 3.00. Basic business skills are surveyed and case studies of successful self-employed artists and entrepreneurs will be studied to develop a broad understanding of this important force in the economy. Guest speakers and selected readings will introduce the student to the scope of opportunities that exist for converting artistic and design skills into self-employment and entrepreneurship. Typically offered Fall Spring.

### **ENTR 25000 - Opportunity Identification**

**Prerequisite(s):** ENTR 10000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course is for those who are seriously interested in starting a new business. Too many businesses are started on the basis of hunches, or trying to copy others. This course will prepare students to systematically search for and evaluate business opportunities that not only fit the prevailing economic environment, but also match the individual's needs and experiences. Permission of Department required. Typically offered Fall.

### **ENTR 30000 - Growing The Firm**

**Prerequisite(s):** ENTR 10000 FOR LEVEL UG WITH MIN. GRADE OF C OR MGMT 10100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Emphasizes the strategic management of growth associated with a rapidly changing business, as distinguished from "small business management", which could include small enterprise units that are static. Teaches the practical aspects of managing a growing business on a day-to-day basis. Practical application to "intrapreneurship", such as growing a division or department within a larger organization. Typically offered Fall Spring.

### **ENTR 30100 - Introduction To Technical Entrepreneurship**

Credit Hours: 3.00. Basic business skills are surveyed and case studies of successful entrepreneurs in high-tech businesses and will be studied to develop a broad understanding of this important force in the economy. Guest speakers and selected readings will introduce the student to the scope of opportunities that exist for promoting the growth of technical entrepreneurship. Typically offered Fall Spring.

### **ENTR 30200 - Creative Thinking And Innovation**

**Prerequisite(s):** ENTR 10000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Explores the very earliest stages of firm and product development: the process of idea generation, evaluation, and development. In addition to idea generation, focus will be on identifying ideas and developing products that have the best chance of success in the marketplace. Typically offered Fall Spring Summer.

### **ENTR 30300 - Entrepreneurial Finance**

**Prerequisite(s):** FIN 31000 FOR LEVEL UG WITH MIN. GRADE OF C OR MGMT 31000 FOR LEVEL UG WITH MIN. GRADE OF C OR GBG 33300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. For students interested in business start-up or management of a growing firm. Exposure to the principles, methods and tools used in financial planning, analysis, and control of the small business enterprise. Covers short-term financial planning and control, creation of pro forma financial statements, and business valuation techniques. Presents how and where to seek financing via a variety of debt and equity sources. Permission of Department required. Typically offered Fall.

### **ENTR 31001 - Launching A New Venture**

**Prerequisite(s):** ENTR 10000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course is for those interested in launching their own business. The course will focus on tying together all of the students' entrepreneurship education to date, including finance, marketing, management and operations, business planning, and many more core business classes so that students will be ready to launch their company before the end of the class. Permission of Department required. Typically offered Spring.

### **ENTR 33300 - Family Business Management**

Credit Hours: 3.00. This course will allow students to look into the dynamics that make up a family business. The students will learn about leadership and relationships that are inherent in family businesses and how these are intertwined in the ownership, governance and management of the family business. Students will explore generational, sibling and extended family issues and how they play out in the workplace. Typically offered Fall Spring Summer.

### **ENTR 40000 - Small Business Consulting**

**Prerequisite(s):** (MGMT 31000 FOR LEVEL UG WITH MIN. GRADE OF C OR BA 21000 FOR LEVEL UG WITH MIN. GRADE OF C) AND (MGMT 36000 FOR LEVEL UG WITH MIN. GRADE OF C OR BA 36100 FOR LEVEL UG WITH MIN. GRADE OF C) AND (MGMT 32400 FOR LEVEL UG WITH MIN. GRADE OF C OR MGMT 22400 FOR LEVEL UG WITH MIN. GRADE OF C OR BA 22400 FOR LEVEL UG WITH MIN. GRADE OF C) AND (OBHR 33000 FOR LEVEL UG WITH MIN. GRADE OF C OR BA 23000 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 3.00. Student consultant teams are assigned to individual, local, client companies to look at, study, and analyze one or more of their existing business problems or challenges. Each consultant team, with the active involvement and help of the instructor, will conduct the consulting assignment and submit a final report by the end of the semester. Consulting teams will also make a live presentation to the client. Typically offered Summer Fall Spring.

### **ENTR 40100 - Social Entrepreneurship**

**Prerequisite(s):** ENTR 10000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This is an experiential learning course designed to show students that entrepreneurship can be useful for community enrichment and not just direct generation of wealth. In the course, students will learn about various aspects of social entrepreneurship and undertake a project of their choice designed to improve the local community. Typically offered Fall Spring Summer.

### **ENTR 41000 - Advanced Small Business Consulting**

**Prerequisite(s):** ENTR 40000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Student consultant teams are assigned to individual, local, client companies to look at, study, and analyze one or more of their existing business problems or challenges. Each consultant team, with the active involvement and help of the instructor, will conduct the consulting assignment and submit a final report by the end of the semester. Consulting teams will also make a live presentation to the client. Typically offered Fall Spring Summer.

### **ENTR 42000 - Business Plan Development**

**Prerequisite(s):** ENTR 10000 FOR LEVEL UG WITH MIN. GRADE OF C AND (BA 12000 FOR LEVEL UG WITH MIN. GRADE OF C OR MGMT 20000 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 3.00. The components of a business plan are analyzed. The focus is on the research, preparation, and presentation of the plan in a critical environment. Major components are marketing analysis, financial calculations, and the applications of sound managerial principles. Public and private resources available to fund new start-ups, expansions, and acquisitions will be explored and proforms statements will be constructed. Typically offered Fall Spring.

### **ENTR 45000 - Corporate Entrepreneurship**

**Prerequisite(s):** ENTR 42000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course acknowledges that entrepreneurial activities occur in multiple organizational settings, including in corporations. As a capstone course to the entrepreneurship program, Corporate Entrepreneurship will integrate all aspects of the entrepreneurial process and help students learn how to lead an entrepreneurial enterprise. Permission of Department required. Typically offered Spring.

### **ENTR 49500 - Internship In Entrepreneurship**

Credit Hours: 1.00 to 4.00. A special course in selected areas of management, designed to provide practical field experience under professional supervision in selected situations. Permission of Instructor required. Typically offered Fall Summer Spring.

### **ENTR 49900 - Undergraduate Research In Entrepreneurship**

Credit Hours: 3.00. Student will work with a faculty member on a research project in their major. They will contribute to ongoing research while learning current research techniques in management. During this process the students will develop critical thinking and oral and written communication skills. Permission of Instructor required. Typically offered Fall Spring Summer.

## **Equine Management**

### **EQU 10000 - Introduction To Equine Management**

Credit Hours: 3.00. The course provides an introduction to the various facets of the equine industry and discusses their impact on state and national economies. Topics include but are not limited to equine sports and disciplines, career opportunities, national organizations and governing bodies, international equine operations, and equine economics contributions. Typically offered Summer Fall Spring.

### **EQU 20000 - Software For Equine Operations**

**Prerequisite(s):** MGMT 10200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Microsoft Office is used to create business newsletters and databases. Hands-on-experience using various equine software packages and creation of a business web site. Typically offered Summer Fall Spring.

### **EQU 22000 - Global Perspective Of Equine Industry**

Credit Hours: 3.00. A study of the global scope of the equine industry and the economic, political and social forces influencing growth. Attention will be given to the effects of changing political systems, regulation, taxation, exchange rates, global competition, demographics and other forces. Typically offered Summer Fall Spring.

### **EQU 30000 - Equine Internship**

**Prerequisite(s):** EQU 10000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Students will work in an equine management environment in an organized and supervised situation designed to provide experience and challenges in a management situation. Typically offered Summer Fall Spring.

### **EQU 32000 - Equine Taxation**

**Prerequisite(s):** EQU 22000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. The focus is on Federal income tax laws and their impact on the equine operations. Business v. Hobby issue will be addressed by analyzing cases applying the nine regulatory factors determining the issue. Also to be addressed are forms of business, e.g. proprietorships, syndicates, partnerships, corporations, limited liability companies, cash and accrual methods of accounting, passive losses, depreciation, sales and exchanges. State and foreign taxes will be reviewed as they effect equine operations. Typically offered Summer Fall Spring.

### **EQU 33000 - Equine Staff Management**

**Prerequisite(s):** EQU 22000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Introduction to the organizational structure and human resources and people required for equine operations whether that be a horse show, breeding farm, race track, or horsemen's organization. Examples include the identification of a chain of command and the process of coordinating work. Topics that will be discussed include recruitment, selection, training, and employee evaluation. Typically offered Summer Fall Spring.

### **EQU 34000 - Equine Ethical Issues**

Credit Hours: 3.00. The course provides an introduction to ethical issues in the equine industry. Typically offered Summer Fall Spring.

### **EQU 35000 - Equine Operations**

Credit Hours: 3.00. Introduction to methods combining accounting with budgeting, spreadsheets, risk analysis, and business plans to facilitate event operations. Equine industry related problem solving incorporating research techniques, data collection, quantitative analysis and decision making. Typically offered Summer Fall Spring.

### **EQU 37000 - Equine Sales And Services Marketing**

**Prerequisite(s):** BA 22400 FOR LEVEL UG WITH MIN. GRADE OF D- OR MGMT 32400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. . Marketing principles applied to the equine industry. Emphasis on services marketing in equine businesses including application of 4 P's to services, design and management of service processes, crafting a service environment, and managing relationships and building loyalty . Typically offered Summer Fall Spring.

### **EQU 37200 - Equine Evaluation**

**Prerequisite(s):** EQU 10000 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. This course presents concepts on equine evaluation and teaches students to apply selection criteria established by National Breed Associations for equine performance and value. Typically offered Summer.

### **EQU 40000 - Equine Legal Issues**

**Prerequisite(s):** EQU 35000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An introduction to the legal aspects of the equine industry, to include an overview of commercial transactions, such as private and public sales of horses, stallion syndicate agreements, stallion service contracts, training agreements, boarding contracts, and applications of the Uniform Commercial Code to the equine industry. Typically offered Summer Fall Spring.

### **EQU 41000 - Equine Governance Structures**

**Prerequisite(s):** EQU 10000 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. This course discusses the role of international and national equine competition governance bodies, breed registry and association governance, and USDA governance role in the equine industries. Typically offered Fall Spring Summer.

### **EQU 42000 - Horse Racing And Gaming Systems**

Credit Hours: 3.00. The study of the economics of casino gaming, lottery stems, and pari-mutuel wagering. Emphasis will be placed on factors affecting wagering and gaming, including product pricing, quality, competition, profits, and marketing strategy. Typically offered Summer Fall Spring.

### **EQU 44000 - Equine Stable Management**

Credit Hours: 3.00. This course presents management practices essential for economic planning of equine stable operations. Students are provided with application examples and industry contacts. Typically offered Summer.

### **EQU 45000 - Equine Senior Project**

**Prerequisite(s):** EQU 40000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course requires students to combine their experience in an internship with their course work to produce a 3-year business plan for an equine operation. Typically offered Summer Fall Spring.

### **EQU 48000 - Horse Show Project Management**

**Prerequisite(s):** EQU 35000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course covers basic project management skills applied to horse shows and includes scheduling, resource allocation, budgeting, and reporting to regulatory agencies. Typically offered Summer Fall Spring.

### **EQU 49000 - Equine Special Topics**

Credit Hours: 1.00 to 4.00. Arrange with instructor before enrolling. Investigation in a specific equine management field. Permission of instructor required. Typically offered Fall Spring Summer.

## **Engineering Technology**

### **ET 10000 - Introduction To Engineering Technology**

Credit Hours: 1.00. This course will introduce engineering technology students to resources and skills that will help them to be successful in their studies and ultimately in their careers. This course will help students explore engineering technology by introducing campus, regional, and national resources such as professional societies in their chosen fields. It will also help students improve in areas important to becoming better students. These areas may include topics such as planning academic careers, mentoring, improving study skills, goal setting, and utilization of library resources. In addition, the course will focus on specific introductory concepts important to engineering technology students such as using campus computer resources and the TAC of ABET outcomes. Typically offered Fall Spring Summer.

### **ET 15100 - Career Planning**

Credit Hours: 1.00 to 3.00. All technology students enrolled in this course investigate different types of careers in their field and the resources available to help begin a career. Invited industrial speakers will provide insight into current industry needs to help students focus on an appropriate career path. Extensive involvement with the Office of Career Services will help the students connect with possible employers. Permission of Instructor required. Typically offered Fall Spring.



**ET 25000 - Industrial Practice I**

Credit Hours: 0.00. Co-op work experience. Typically offered Fall Spring Summer.

**ET 25200 - Internship Program II**

Credit Hours: 1.00 to 3.00. A practicum designed to combine University study with work experience directly related to the student's plan of study. Permission of Department and Instructor required. Typically offered Fall Spring Summer.

**ET 30000 - Industrial Practice II**

Credit Hours: 0.00. Co-op work experience. Typically offered Fall Spring Summer.

**ET 35000 - Industrial Practice III**

Credit Hours: 0.00. Co-op work experience. Typically offered Fall Spring Summer.

**ET 35300 - Internship Program III**

**Prerequisite(s):** ET 25200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 1.00 to 3.00. A practicum designed to combine University study with work experience directly related to the student's plan of study. Typically offered Fall Spring Summer.

**ET 40000 - Industrial Practice IV**

Credit Hours: 0.00. Co-op work experience. Typically offered Fall Spring Summer.

**ET 45000 - Industrial Practice V**

Credit Hours: 0.00. Co-op work experience. Typically offered Fall Spring Summer.

**ET 45400 - Internship Program IV**

**Prerequisite(s):** ET 35300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 1.00 to 3.00. A practicum designed to combine University study with work experience directly related to the student's plan of study. Typically offered Fall Spring Summer.

**ET 49500 - Senior Project Survey**

**Prerequisite(s):** OLS 33100 FOR LEVEL UG WITH MIN. GRADE OF D- AND IET 30800 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Students will consider several projects and develop a topic for the following ET 49700 course.

They will develop project scope, establish time schedules, and give a written and oral report on their proposal.

Typically offered Fall Spring Summer.

**ET 49700 - Senior Project**

**Prerequisite(s):** ET 49500 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Senior project directed work on individual projects for senior engineering technology students.

Typically offered Fall Spring Summer.

**ET 49900 - Engineering Technology**

Credit Hours: 1.00 to 6.00. Hours and subject matter to be arranged by staff. Course may be repeated for credit.

Typically offered Fall Spring Summer.

**Ethnic Studies****ETHN 10000 - Introduction To Ethnic Studies**

Credit Hours: 3.00. The course provides students with general knowledge about racial and ethnic history, identity, and experience in the United States. Typically offered Fall Spring Summer.

**ETHN 20100 - The Hispanic American Experience**

Credit Hours: 3.00. Dimensions of the Hispanic American experience, including history, education, politics, psychology, economics, religion, social organization, and art are covered in the course. Typically offered Fall Spring Summer.

**ETHN 20200 - The African American Experience**

Credit Hours: 3.00. Dimensions of the African American experience, including history, education, politics, psychology, economics, religion, social organization, and art are covered in the course. Typically offered Fall Spring Summer.

**ETHN 31300 - African American Women In Fiction**

Credit Hours: 3.00. This course examines fiction by African American women during the last century, emphasizing literary, cultural, and political aspects of the writing. The intersection of gender, race, class, and sexuality emerge as dominant issues within the fiction and the course as well. Both novels and short stories are explored. Typically offered Fall Spring Summer.

**ETHN 34000 - Literature By Women Of Color**

Credit Hours: 3.00. This course focuses on literature written in English by women of color living in the United States. Writers included are of African American, Native American, Asian American and Latino/Hispanic descent. The course introduces students to the emerging body of writing by women of color, heightening awareness of these women's

literary contributions. English 340 examines some of the cultural differences among these groups, as reflected in the literature. The course also explores obstacles, particularly those related to race, gender, and class, that women of color share. Finally, the course enhances understanding of the experiences shared by women from all cultures. Typically offered Fall Spring Summer.

### **ETHN 39000 - Topics In Ethnic Studies**

Credit Hours: 1.00 to 6.00. Variable titles. Typically offered Fall Spring Summer.

### **ETHN 47500 - Ethnic Identity In Film**

**Prerequisite(s):** COM 21400 FOR LEVEL UG WITH MIN. GRADE OF D- OR ETHN 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Ethnic Identity in Film explores the construction of American ethnicity in mainstream American films. By examining films that reflect a particular ethnic sensibility and created by an individual of that particular ethnicity, this course will explore ethnic values and traditions. Typically offered Fall Spring Summer.

## **Finance**

### **FIN 21000 - Principles Of Finance**

**Prerequisite(s):** (BA 12000 FOR LEVEL UG WITH MIN. GRADE OF C OR ACC 12000 FOR LEVEL UG WITH MIN. GRADE OF C) AND (MGMT 10100 FOR LEVEL UG WITH MIN. GRADE OF C OR GBG 12700 FOR LEVEL UG WITH MIN. GRADE OF C OR BUSM 10100 FOR LEVEL UG WITH MIN. GRADE OF C) AND ECON 21000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Analysis of the basic problems a business will confront in the formation, financial operations, and termination of a business. Important financial issues including capital formation, utilizing capital markets, and investments will be covered as well as a general understanding of money and capital markets and monetary institutions. Typically offered Summer Fall Spring.

### **FIN 24000 - Personal Financial Management**

Credit Hours: 3.00. Lectures and case analysis of managing one's personal finances; includes budgeting, credit analysis, insurance, taxation, housing, estate planning, private and business investment. Not available for credit in Management concentrations. Credit will only be given for one of the following: ECON 24000, FIN 24000 OR FIN 44200. Typically offered Fall Spring Summer.

### **FIN 31000 - Financial Management**

**Prerequisite(s):** (MGMT 20000 FOR LEVEL UG WITH MIN. GRADE OF C OR ACC 20000 FOR LEVEL UG WITH MIN. GRADE OF C) AND (MGMT 22500 FOR LEVEL UG WITH MIN. GRADE OF C OR BUSM 22500 FOR LEVEL UG WITH MIN. GRADE OF C) OR STAT 30100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Management of the financial affairs of the industrial enterprise. Working capital management, current asset management, capital budgeting, stock and bond valuation, and capital structure decisions. Typically offered Fall Spring Summer.

### **FIN 34000 - Corporate Financial Problems**

**Prerequisite(s):** (MGMT 22500 FOR LEVEL UG WITH MIN. GRADE OF C OR BUSM 22500 FOR LEVEL UG WITH MIN. GRADE OF C) AND (MGMT 31000 FOR LEVEL UG WITH MIN. GRADE OF C OR GBG 33300 FOR LEVEL UG WITH MIN. GRADE OF C OR FIN 31000 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 3.00. Advanced topics in financial management of corporations, from the viewpoint of an internal financial officer. A continuation of FIN 31000 with additional depth and topic coverage emphasizing applications. Typically offered Fall Spring Summer.

### **FIN 41200 - Financial Markets And Institutions**

**Prerequisite(s):** (MGMT 31000 FOR LEVEL UG WITH MIN. GRADE OF C OR GBG 33300 FOR LEVEL UG WITH MIN. GRADE OF C OR FIN 31000 FOR LEVEL UG WITH MIN. GRADE OF C) AND ECON 25200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Introduction to financial markets and management of financial institutions. Emphasis on determinants of interest rates, and measurement and management of financial risk. Concentration on management of depository firms such as banks and savings and loans. Typically offered Fall Spring Summer.

### **FIN 44000 - Management Of Financial Institutions**

**Prerequisite(s):** MGMT 31000 FOR LEVEL UG WITH MIN. GRADE OF C OR FIN 31000 FOR LEVEL UG WITH MIN. GRADE OF C OR GBG 33300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Management and policy topics providing insight on the internal operating procedures, and problems of financial institutions. Principles of loan analysis and the role of financial institutions in the capital markets are studies with an emphasis on commercial bank management. Typically offered Fall Spring Summer.

### **FIN 44100 - Futures And Options**

**Prerequisite(s):** MGMT 31000 FOR LEVEL UG WITH MIN. GRADE OF C OR FIN 31000 FOR LEVEL UG WITH MIN. GRADE OF C OR GBG 33300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Characteristics of futures and options and their relationship to stocks, bonds, and other financial assets. The determination of futures and options prices and how they are used for hedging and immunization purposes. Typically offered Fall Spring Summer.

### **FIN 44200 - Personal Finance**

Credit Hours: 3.00. Lectures and discussion on problems of managing one's personal finances. Covers budgeting; use of and cost of credit; life and property insurance; income and estate taxation; housing; wills, trusts and estate planning; saving and investments. Not available for credit towards economics and business economics concentrations. Credit only for one of the following: ECON 24000, FIN 24000, OR FIN 44200. Typically offered Fall Spring Summer.

### **FIN 44300 - Fundamentals Of Investments**

**Prerequisite(s):** MGMT 31000 FOR LEVEL UG WITH MIN. GRADE OF C OR FIN 31000 FOR LEVEL UG WITH MIN. GRADE OF C OR GBG 33300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Operations of the markets in which securities are traded, and investment alternatives are studied. Theory and application of security valuation and portfolio selection techniques are examined with emphasis upon evaluation of investment performance. Typically offered Fall Spring Summer.

### **FIN 44400 - Investment Management**

**Prerequisite(s):** MGMT 44300 FOR LEVEL UG WITH MIN. GRADE OF C OR FIN 44300 FOR LEVEL UG WITH MIN. GRADE OF C OR MGMT 44500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Treatment of problems of portfolio analysis, securities investment selection, and capital markets. Theoretical development, as well as quantitative and practical applications, at the level of the individual decision-maker. Typically offered Fall Spring Summer.

### **FIN 44700 - Derivatives**

**Prerequisite(s):** MGMT 44300 FOR LEVEL UG WITH MIN. GRADE OF C OR FIN 44300 FOR LEVEL UG WITH MIN. GRADE OF C OR MGMT 44500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Overview of derivative contracts and their relationship to stocks, bonds and other tradeable assets. Also, a description of risk and risk management. Specific topics include forward, futures, options, swaps, and related contingent claims contracts. The determination of their theoretical prices as well as their application in hedging and portfolio immunization. Typically offered Summer Fall Spring.

### **FIN 44800 - Real Estate Principles**

**Prerequisite(s):** MGMT 31000 FOR LEVEL UG WITH MIN. GRADE OF C OR FIN 31000 FOR LEVEL UG WITH MIN. GRADE OF C OR GBG 33300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course focuses on the key aspects of negotiation, acquisition, and financing of real estate. Other topics include amortization, renovation, restoration, management and depreciation of real estate assets. Typically offered Fall Spring.

### **FIN 44900 - International Financial Management**

**Prerequisite(s):** (MGMT 31000 FOR LEVEL UG WITH MIN. GRADE OF C OR GBG 33300 FOR LEVEL UG WITH MIN. GRADE OF C OR FIN 31000 FOR LEVEL UG WITH MIN. GRADE OF C) AND ECON 25200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A study of the financial management of the international operations of the business. The course develops the international financial environment within which the multinational firm operates. Instruments such as currency forward, futures, and options contracts available for the firm to manage additional risk associated with international operations. Typically offered Fall Spring Summer.

### **FIN 49500 - Internship In Finance**

Credit Hours: 0.00 to 4.00. A special course in selected areas of finance, designed to provide practical field experience under professional supervision in selected situations related to the student's area of specialization. Typically offered Fall Spring Summer.

### **FIN 49900 - Undergraduate Research In Finance**

Credit Hours: 3.00. Students will work with a faculty member on a research project in their major. They will contribute to ongoing research while learning current research techniques in management. During this process the students will develop critical thinking and oral and written communication skills. If human subjects are to be involved, proper IRB clearance will be obtained in advance. Typically offered Fall Spring Summer.

## **Fitness Management**

### **FM 10000 - Individualized Wellness Strategies**

Credit Hours: 1.00. The course will provide students with a working knowledge of healthy living practices, an assessment of the students' present wellness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies that can be enjoyed throughout life. Typically offered Fall Spring Summer.

### **FM 10100 - Cardiovascular Exercise Machines**

Credit Hours: 1.00. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present wellness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies, that can be enjoyed throughout life. . Typically offered Fall Spring Summer.

### **FM 10200 - Weight Training**

Credit Hours: 1.00. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present wellness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies, that can be enjoyed throughout life. . Typically offered Fall Spring Summer.

### **FM 10300 - Walking/Jogging**

Credit Hours: 1.00. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present wellness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies, that can be enjoyed throughout life. . Typically offered Fall Spring Summer.

### **FM 10400 - Physical Fitness**

Credit Hours: 1.00. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present wellness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies, that can be enjoyed throughout life. Typically offered Fall Spring Summer.

### **FM 10500 - Yoga**

Credit Hours: 1.00. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present wellness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies, that can be enjoyed throughout life. Typically offered Fall Spring Summer.

### **FM 10600 - Racquetball**

Credit Hours: 1.00. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present wellness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies, that can be enjoyed throughout life. Typically offered Fall Spring Summer.

### **FM 10700 - Basic Self-Defense**

Credit Hours: 1.00. This course will provide students with a working knowledge of healthy living practices, an assessment of the students' present wellness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies, that can be enjoyed throughout life. Typically offered Fall Spring Summer.

### **FM 11200 - Aikido**

Credit Hours: 1.00. This course will provide students with a working knowledge of healthy living practices, an assessment of the student's present wellness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies that can be enjoyed throughout life. Typically offered Summer Fall Spring.

### **FM 11300 - Tai Chi**

Credit Hours: 1.00. This course will provide students with a working knowledge of healthy living practices, an assessment of the student's present wellness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies that can be enjoyed throughout life. Typically offered Summer Fall Spring.

### **FM 11400 - Pilates**

Credit Hours: 1.00. This course will provide students with a working knowledge of healthy living practices, an assessment of the student's present wellness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies that can be enjoyed throughout life. Typically offered Summer Fall Spring.

### **FM 11600 - Wing Chun**

Credit Hours: 1.00. This course will provide students with a working knowledge of healthy living practices, an assessment of the student's present wellness status, and an opportunity to choose a physical activity, as well as develop additional wellness strategies that can be enjoyed throughout life. Typically offered Summer Fall Spring.

### **FM 11700 - Latin Ballroom Dance Partner**

Credit Hours: 1.00. This course is an introduction to dance partnering techniques in Latin dance. It is an exercise class to facilitate the development of proper style and understanding of ballroom/Latin dance partnering movements and techniques while providing aerobic benefit. This course also provides students with a working knowledge of healthy living practices, and assessment of students' present fitness status and the opportunity to develop wellness strategies that can be enjoyed throughout life. Typically offered Fall Spring Summer.

### **FM 11701 - Latin Ballroom Dance Experience**

Credit Hours: 1.00. This course is an introduction to ballroom techniques in Latin dance. It is an exercise class to facilitate the development of proper style and understanding of ballroom/Latin dance movements and techniques while providing aerobic benefit. This course also provides students with a working knowledge of healthy living practices, an

assessment of students' present fitness status and the opportunity to develop wellness strategies that can be enjoyed throughout life. Typically offered Fall Spring Summer.

### **FM 11702 - Advanced Weight Training**

Credit Hours: 1.00. This course follows FM 10200, Weight Training, and is an advanced physical activity class designed to instruct students in advanced weight training principles and techniques. This course also provides students with a working knowledge of healthy living practices, an assessment of students' present fitness status and the opportunity to develop wellness strategies that can be enjoyed throughout life. Typically offered Fall Spring Summer.

### **FM 11703 - Jiu Jitsu**

Credit Hours: 1.00. This course provides instruction and practice of this martial art and combat sport that focuses on grappling and grouped fighting, achieving a dominant position, and application of submissions techniques. This course also provides students with a working knowledge of healthy living practices, an assessment of students' present fitness status and the opportunity to develop wellness strategies that can be enjoyed throughout life. Typically offered Fall Spring Summer.

### **FM 11704 - Zumba**

Credit Hours: 1.00. This course is an introduction to Zumba, a Latin-inspired dance fitness class that incorporates Latin and international music and dance movements. It is an exercise class to facilitate the students' development of a dynamic, exciting and effective fitness system which provides aerobic benefit. This course also provides students with a working knowledge of healthy living practices, an assessment of students' present fitness status and the opportunity to develop wellness strategies that can be enjoyed through life. Typically offered Fall Spring Summer.

### **FM 16800 - Foundations In Exercise Physiology**

**Prerequisite(s):** SCI 10500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 1.00. Basic foundations in exercise physiology for understanding sports performance in college and professional athletes. Methods and techniques for normal/abnormal responses and adaptation to sports exercise is studied. Typically offered Fall Spring Summer.

### **FM 21900 - Issues And Problems In Health**

Credit Hours: 3.00. Designed to acquaint students with various aspects of personal and community health problems. Emphasis will be on current health issues such as pollution, mental health, venereal disease, aging, medical care, etc. Typically offered Fall Spring Summer.

### **FM 25000 - Principles Of Adult Fitness**

Credit Hours: 3.00. The purpose of this course is to expose students to the effects of exercise on health over the life course. The health benefits of different types of exercise will be reviewed. Students will have the opportunity to utilize fitness equipment and develop their own exercise plans. Existing community programs and resources will be discussed. Typically offered Summer Fall Spring.

### **FM 26800 - Physiology Of Exercise**

**Prerequisite(s):** CHM 11900 FOR LEVEL UG WITH MIN. GRADE OF D AND BIOL 21400 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Physiological concepts and principles underlying human responses and adaptations to exercise. Selected methods and techniques of assessing physiological function and evaluating performance in physical efforts in a laboratory setting. Typically offered Summer Fall Spring.

### **FM 28000 - Principles Of First Aid**

Credit Hours: 2.00. A course designed to instruct students in the immediate and temporary care given victims of an accident or illness. Covers dressings, bandaging, CPR, lacerations, insect and animal bites and other first aid topics. Certification included. Typically offered Fall Spring Summer.

### **FM 30000 - Practicum In Health, Fitness And Nutrition**

**Prerequisite(s):** FN 30300 FOR LEVEL UG WITH MIN. GRADE OF C OR FM 31500 FOR LEVEL UG WITH MIN. GRADE OF C AND FM 26800 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Clinical field experience of at least 300 hours in an approved health, fitness, and/or nutrition facility under the direction of a certified or registered instructor. Typically offered Fall Spring Summer.

### **FM 30100 - Recreation Leadership**

Credit Hours: 3.00. Provides instruction in various aspects of recreation. Community, school, camping, travel and leisure time activities will be part of the instruction. Identification of the principles of recreation and the many organizations promoting recreational activities are included. Typically offered Fall Spring Summer.

### **FM 30200 - Anatomy And Kinesiology**

**Prerequisite(s):** BIOL 21300 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 21400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Overview of human body structures and functions appropriate for exercise science. Emphasis on musculoskeletal and neuromuscular systems as they relate to human movement. Typically offered Fall Spring Summer.

### **FM 30500 - Practicum In Fitness Management**

**Prerequisite(s):** FM 30000 FOR LEVEL UG WITH MIN. GRADE OF C AND FM 41000 FOR LEVEL UG WITH MIN. GRADE OF C AND FM 47400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Second level of clinical field experience of at least 300 hours in an approved health, fitness, and or nutrition facility under the direction of a certified or registered instructor. Typically offered Fall Spring Summer.

### **FM 31300 - Beginning Concepts Of Personal Training**

**Prerequisite(s):** FM 26800 FOR LEVEL UG WITH MIN. GRADE OF C AND FM 30200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 2.00. This course is designed to give students the knowledge and understanding necessary to prepare for the ACE Personal Trainer Certification Exam and become personal trainers. This course presents the ACE Integrated Fitness Training (ACE-IFT) Model as a comprehensive system for designing individualized programs based on each client's unique health, fitness and goals. The information covered by this course and the ACE IFT Model will help students learn how to facilitate rapport, adherence, self-efficacy and behavior changes in clients, as well as design programs that help clients to improve posture, movement, flexibility, balance, core function, cardiorespiratory fitness, and muscular endurance and strength. Typically offered Fall Spring Summer.

### **FM 31400 - Beginning Concepts Of Group Exercise**

**Prerequisite(s):** FM 26800 FOR LEVEL UG WITH MIN. GRADE OF C AND FM 30200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 2.00. This course is designed to provide theoretical knowledge and practical skills in preparation for the ACE Group Fitness Instructor Certification Exam. Topics include guidelines for instruction safe, effective and purposeful exercise, essentials of the instructor-participant relationship, the principles of motivation to encourage adherence in the group fitness setting, effective instructor-to-participant communication techniques, use of music and music selection, methods for enhancing group leadership, and the group fitness instructor's professional role. Typically offered Fall Spring Summer.

### **FM 32000 - Physical Growth Throughout The Life Span**

**Prerequisite(s):** FM 26800 FOR LEVEL UG WITH MIN. GRADE OF C AND FM 30200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 2.00. Designed to acquaint fitness and health professionals with the physical growth and development of individuals throughout the life span. Includes factors relating to movement, behavior, learning, motor skills, and nutrition. Typically offered Fall Spring Summer.

### **FM 37500 - Sport-Related Tourism And Leisure Management**

Credit Hours: 3.00. (HTM 37500) Integration of Sport and Tourism disciplines. Sport participation and spectator travel, hard and soft adventure tourism, and management of leisure time are emphasized. Focus on the dynamics behind the explosion in Sport and Adventure Tourism. Not open to students with credit in HTM 37500. Typically offered Summer Fall Spring.

### **FM 39000 - Undergraduate Special Problems**

Credit Hours: 0.00 to 6.00. Individual or group participation in supervised reading, laboratory experiences, field experiences, or research in special areas of the field of fitness management. Typically offered Fall Spring Summer.

### **FM 41000 - Evaluation, Testing And Assessment Of Exercise**

**Prerequisite(s):** FM 26800 FOR LEVEL UG WITH MIN. GRADE OF C AND FM 30000 FOR LEVEL UG WITH MIN. GRADE OF C AND FM 30200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Instruction and laboratory experience in the scientific evaluation, testing and assessment of exercise. Includes data collection, analysis and statistical applications. Oriented toward interpreting test data and applying it toward the design of individual exercise programs. Typically offered Fall Spring Summer.

## **Foods and Nutrition**

### **FM 47400 - Physiology Of Exercise II**

**Prerequisite(s):** FM 26800 FOR LEVEL UG WITH MIN. GRADE OF C AND FM 30200 FOR LEVEL UG WITH MIN. GRADE OF C AND FM 41000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 2.00. Advanced level exercise physiology course exploring physiological concepts and principles assessing physiological function and evaluating performance in physical efforts in a laboratory setting. Includes integration of metabolic, cardiovascular, respiratory, endocrinological and biochemical functions of the human body in response to exercise. Typically offered Fall Spring Summer.

**FN 10500 - Nutrition In The 21st Century**

Credit Hours: 1.00. Overview of the discipline of nutrition science including undergraduate and professional opportunities, research and critical thinking requirements. Typically offered Fall.

**FN 12000 - Nutrition for a Healthy Lifestyle**

Credit Hours: 1.00. Basic understanding of nutrition guidelines and lifestyle risk factors related to diet. Assessment of the individual's diet and related behaviors. Solutions to everyday nutrition problems that lead to lifestyle enhancements are presented. (Course does not meet nutrition competency requirement for Nursing, Early Childhood Education or Hospitality and Tourism Management majors). Typically offered Summer Fall Spring.

**FN 12100 - Vegetarian Nutrition**

Credit Hours: 1.00. Issues to review when considering adoption of a vegetarian diet. Nutrition guidelines and risk factors related to vegetarianism are addressed. Various types of vegetarian diets and the benefits/risks each pose are discussed. Course does not meet nutrition competency requirement for nursing, early childhood education or hospitality and tourism management majors. Typically offered Summer Fall Spring.

**FN 20300 - Foods Selection And Preparation**

Credit Hours: 3.00. Principles of food selection, preparation, and meal planning. Typically offered Fall Spring Summer.

**FN 20500 - Food Science I**

**Prerequisite(s):** CHM 11100 FOR LEVEL UG WITH MIN. GRADE OF C- OR CHM 11200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Chemical and physical composition of foods: their changes during processing, storage, and preparation. Typically offered Fall Spring.

**FN 20800 - Nutrition in Women's Health**

Credit Hours: 3.00. Exploration of women's health issues with emphasis on nutrition. Review of current research in normal and preventative nutrition throughout the lifecycle. Focus on women as individuals and on those who counsel and educate women. (Course does not meet nutrition competency requirements for Nursing, Early Childhood Education or Hospitality and Tourism Management majors. Not open to students with credit in WOST 20800). Typically offered Summer Fall Spring.

**FN 26000 - Child Nutrition**

Credit Hours: 3.00. Study of the basic principles of food and nutrition from pregnancy through the primary years and methods to achieve good nutritional status. (This course does not satisfy the nutrition competency for Nursing or HTM majors). Typically offered Fall Spring Summer.

**FN 26100 - Nutrition For Health, Fitness, And Sports**

Credit Hours: 3.00. Study of the relationship between physical fitness/sports activity and nutrition resulting in optimum health. Special emphasis on nutritional demands during exercise or sports activities. Laboratory experience in the Fitness Center required. (This course does not satisfy the Nutrition competency for Nursing or HTM majors). Typically offered Fall Spring Summer.

**FN 30100 - Nutrition And The Culinary Arts**

Credit Hours: 3.00. This lecture/lab class emphasizes marrying culinary techniques with current dietary guidelines for varying populations. Health-centered meal preparation, cooking and presentation for the common dietary restrictions is included. Typically offered Fall Spring Summer.

**FN 30300 - Essentials Of Nutrition**

Credit Hours: 3.00. Basic nutrition and its application in meeting nutritional needs of all ages. Credit not given for both FN 30300 and FN 31500. Typically offered Fall Spring Summer. CTL: Human Nutrition

**FN 31500 - Fundamentals Of Nutrition**

**Prerequisite(s):** CHM 25100 FOR LEVEL UG WITH MIN. GRADE OF C- AND CHM 25200 FOR LEVEL UG WITH MIN. GRADE OF C- AND BIOL 21400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Basic principles of nutrition and their application in meeting nutritional needs during the life cycle. Credit not given for both FN 30300 and FN 31500. Typically offered Fall Spring.

**FN 33000 - Diet Selection And Planning**

**Prerequisite(s):** (FN 20300 FOR LEVEL UG WITH MIN. GRADE OF C- OR FN 20500 FOR LEVEL UG WITH MIN. GRADE OF C-) AND (FN 30300 FOR LEVEL UG WITH MIN. GRADE OF C- OR FN 31500 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 3.00. Diet selection for health maintenance in culturally diverse populations based on current dietary guides with utilization of the computer for diet evaluation. Typically offered Fall.

**FN 36000 - Nutrition For The Aging**

**Prerequisite(s):** FN 30300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Nutritional needs and problems of the aging. Includes a review of community and institutional nutrition and food programs. Emphasis on the aging and their environment. Participation in community activities for the aging may be required. (This course does not satisfy the Nutrition competency for Nursing or HTM majors). Typically offered Fall Spring Summer.

### **FN 36500 - Nutrition Throughout The Life Cycle**

**Prerequisite(s):** FN 30300 FOR LEVEL UG WITH MIN. GRADE OF D- AND FN 26000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Examines nutrient requirements and recommendations for normal growth and development and disease prevention. Includes the life stages from pregnancy through older adulthood. Typically offered Fall Spring Summer.

### **FN 39000 - Independent Undergraduate Research**

Credit Hours: 1.00 to 3.00. Individual research projects undertaken with faculty supervision. Permission of instructor required. Typically offered Fall Spring Summer.

### **FN 40001 - Nutrition For Sports Performance**

**Prerequisite(s):** SCI 10500 FOR LEVEL UG WITH MIN. GRADE OF C- AND FM 16800 FOR LEVEL UG WITH MIN. GRADE OF D- AND FN 26100 FOR LEVEL UG WITH MIN. GRADE OF D- AND FN 30300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Overview of the nutritional requirements and the impact on performance in muscle building, endurance and strength training. Includes review of supplements, physiology and nutrition as it relates to the field of human performance. Typically offered Fall Spring Summer.

### **FN 42200 - Community Nutrition And Health Promotion Entrepreneurship**

**Prerequisite(s):** FN 30300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Study of strategies for improving nutritional status and community health. Examination of principles of entrepreneurship and application to the practice of community nutrition. Includes reviews of existing federal and non-governmental programs designed to meet food and nutrition needs of various population groups. Requires participation in community-based projects. Typically offered Summer Fall Spring.

### **FN 59000 - Special Problems In Nutrition**

Credit Hours: 1.00 to 4.00. Individual problems dealing with various aspects of nutrition. Permission of instructor required. Typically offered Fall Summer Spring.

## **Foreign Languages and Literature**

### **FLL 10001 - Cultural Immersion Abroad**

Credit Hours: 0.00. Experiential Cultural Immersion opportunity guided by the Foreign Languages and Literature faculty. Must be taken in conjunction with a for-credit course which requires an applied cultural immersion/study abroad component that will fulfill any component of the student's degree plan of study. Permission of department required. Typically offered Fall Spring Summer.

### **FLL 10300 - Freshman Experience Worldviews**

Credit Hours: 3.00. This course would include utilization of campus resources, goal setting, values exploration, relationship of academic planning and life goals, discipline specific career exploration and critical thinking relative to the study of foreign languages and literature. Typically offered Summer Fall Spring.

### **FLL 19000 - Special Topics**

Credit Hours: 1.00 to 4.00. Special topics related to world languages, cultures, and literatures. Typically offered Summer Fall Spring.

### **FLL 20700 - Franco-American Cultural Studies**

Credit Hours: 3.00. This course will primarily focus on the cultural relationships between France and the United States. It will encourage students to investigate the cultural interactions between these two nations in the course of history. Although the concentration will be on Franco-American connections, the course will foster a broader awareness and understanding of cultural differences essential in today's increasingly global society. Course taught in English and open to all students. Typically offered Spring.

### **FLL 29000 - Special Topics**

Credit Hours: 1.00 to 4.00. Special topics related to world languages, cultures, and literatures. Typically offered Summer Fall Spring.

### **FLL 31100 - French Cinema - Introduction To Film Study**

Credit Hours: 3.00. The course is based on close readings of individual films. We will look at the concept of film analysis and the relationship between film, politics, and society. The written assignments are designed to develop students' writing skills in English and their ability to engage critically with a visual document. Students are expected to



participate actively in class discussions and to lead discussions on assigned topics. The course is taught in English and open to all students. Typically offered Fall Spring Summer.

### **FLL 36101 - The Nature Of Language**

Credit Hours: 3.00. Influence of language in human experience, with attention to its essential role in the progress of civilization and all social activity. Conducted in English but with emphasis on the contribution of the major Western tongues. Typically offered Fall Spring.

### **FLL 39000 - Special Topics**

Credit Hours: 1.00 to 4.00. Special topics related to world languages, cultures, and literatures. Typically offered Summer Fall Spring.

### **FLL 40300 - National, Racial And Ethnic Identities In Austrian Literature Of The 20th Century**

**Prerequisite(s):** (ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- AND ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF D- AND ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D-)

Credit Hours: 3.00. This course explores diverse representations of identity in post-1914 Austrian literature and films, especially in the aftermath of the two world wars. The goal of this course is to examine questions linked to national, ethnic, racial, and gender identity within the above historical, social, cultural, intellectual, and political context. Issues such as the self and the "other", historical burdens of fascism, the holocaust and responsibility, migration, transnationality, colonialism, race, and gender are advanced via narrative and/or cinematic representations of the Austrian context. Typically offered Summer Fall Spring.

### **FLL 40500 - Globalization: Latin American Literature And Transnational Conflicts**

**Prerequisite(s):** (ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- AND ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF D-) OR (ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF D- AND ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF D-)

Credit Hours: 3.00. This course addresses degree requirements for global awareness and diversity. It provides students with an opportunity to explore interdisciplinary approaches to many of the most significant changes occurring in today's world. This course will be added as an elective in the proposed Latin American Studies Minor. The course will fit into Curriculum 2000 as an additional elective. Typically offered Summer Fall Spring.

### **FLL 46400 - Comparative Study Of Modern Languages**

Credit Hours: 3.00. An examination of French, German and Spanish phonology, syntax and morphology. Representative presentations of historical and contemporary descriptive considerations of these languages. Typically offered Fall Spring Summer.

### **FLL 49000 - Special Topics In Foreign Languages And Literatures**

Credit Hours: 1.00 to 4.00. Topics vary. Permission of instructor required. Typically offered Fall Spring Summer.

## **Forensic and Investigating Science**

### **FIS 14000 - Introduction To Forensic Science: Criminalistics**

Credit Hours: 3.00. This course provides an introduction to the history of criminalistics and the scientific techniques applied to forensic investigations. Some focus areas include crime scene and physical evidence handling. Typically offered Fall Spring Summer.

### **FIS 14005 - Introduction To Forensic Science: Evidence Handling**

Credit Hours: 3.00. This course provides an introduction to the theories and practices of applying scientific techniques to crime detection. Some focus areas include the examination of physical evidence and laboratory procedures. Typically offered Fall Spring Summer.

### **FIS 24500 - Laboratory Quality System Theory**

Credit Hours: 3.00. This course will focus on quality theory in general and ISO systems in specific. Students will learn the goals of these systems and how different systems like six sigma and ISO seek to attain these goals. In addition, the course will examine quality systems as they specifically apply to laboratory practice. Students will learn the primary requirement for developing and maintaining a quality system and the principals of quality auditing. Typically offered Fall Spring Summer.

### **FIS 35000 - Courtroom Demeanor**

**Prerequisite(s):** POL 34300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course explores the application of various laws and rules of evidence to the forensic sciences, and examines how the admission and persuasive use of evidence derived from the forensic sciences impacts the administration of justice in the United States. The student will learn of the expert witness in legal matters and the expectations of courtroom behavior. Typically offered Fall Spring Summer.

### **FIS 41000 - Professional Practice In Forensic Science**

Course Credits: This course will bring together the ethical, legal and scientific elements that the student has learned through their previous forensic studies and learn how these elements apply in professional situations. The student will understand how a scientific expert can and cannot present their opinions and findings to the legal system. The student will learn about the roles professional organizations that exist in the forensic industry and how their guidelines become established. Typically offered Fall Spring Summer.

## **Forestry and Natural Resources**

### **FNR 22500 - Dendrology**

**Prerequisite(s):** BIOL 11000 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Field identification, taxonomy, and ecological characteristics of trees, shrubs, and herbs found in forests, prairies, old fields, and wetlands. Typically offered Fall.

### **FNR 38200 - Natural Resources And Man**

Credit Hours: 3.00. A survey of the interrelationships among man, natural resources, and the environment. Course satisfies conservation requirement for teacher certification.. Typically offered Fall Spring Summer.

### **FNR 38800 - Ichthyology**

Credit Hours: 2.00. Functional morphology, physiology, behavior, and ecological relationships of fish; classification and identification of freshwater species; introduction to fishery management principles.. Typically offered Summer Fall Spring.

### **FNR 38900 - Ichthyology Laboratory**

Credit Hours: 1.00. Laboratory on classification and identification of freshwater species; introduction to fisheries management principles.. Typically offered Summer Fall Spring.

### **FNR 52300 - Aquaculture**

Credit Hours: 3.00. Historical perspectives and current practices in aquaculture, including production systems, feeds, water quality requirements, and diseases of commercially important species. Typically offered Spring.

### **FNR 54000 - Wetlands Ecology**

Credit Hours: 3.00. Examination of the biotic and abiotic factors that influence wetlands, including the ecological, socioeconomic, and hydrological values of wetlands. Restoration and wildlife utilization also are examined. Laboratories involve examinations of various aspects of wetland ecology. Class trips are required. Students will pay individual lodging or meal expenses where necessary. Offered in odd-numbered years. Permission of instructor required. Typically offered Fall.

### **FNR 54500 - Fisheries Management**

Credit Hours: 3.00. Theory and practice of fisheries management, with an emphasis on strategies utilized for the management of freshwater and marine fisheries. Application of quantitative methodologies for the assessment and manipulation of aquatic habitats, sport and commercial fish populations, and human resource users and non-users are considered, as is the setting of appropriate goals and objectives for effective, science-based management. One weekend field laboratory is required. Typically offered Fall.

## **Foundations and Administration**

### **EDFA 20000 - History And Philosophy Of Education**

Credit Hours: 3.00. (EDST 20000) How history and philosophy have informed school organization, curriculum, and teaching practice. Students develop their own philosophies of teaching. Topics include continuities and discontinuities of schooling, colonial period to present. Conflicting demands placed upon schools. Issues of race, class, and gender inform debates over school purposes and practices. Typically offered Fall Spring Summer.

### **EDFA 49000 - Individual Research And Teaching Experience**

Credit Hours: 1.00 to 8.00. Opportunity for undergraduate students to investigate particular problems in the field of education under supervision. Typically offered Fall Spring Summer.

### **EDFA 49100 - Topics And Issues In Education**

Credit Hours: 1.00. Provides the student with the opportunity to strengthen the preparation program through the study of selected educational topics and issues based on individual needs and interests. One topic is dealt with in each enrollment. Typically offered Fall Spring Summer.

### **EDFA 51200 - Foundations Of Educational Administration**

Credit Hours: 3.00. (EDST 51200) An examination of the relationship between policy, values, and social change in education, including the roles of local, state, and federal government in educational policymaking and the effects of educational policies on societal issues such as equity, cultural diversity, and opportunity. Typically offered Fall Spring Summer.

### **EDFA 51300 - Educational Facilities Planning**

Credit Hours: 3.00. (EDST 51300) Systems approach as a basis for school facilities planning. Study directed toward procedures for solving facilities problems. Emphasis on techniques for developing and securing technical information. Typically offered Fall Spring Summer.

**EDFA 51600 - School-Community Relations**

Credit Hours: 3.00. (EDST 51600) This course will stress concepts and principles relevant to school-community interaction. It will focus on the new roles of the public in education and will deal with problems encountered by educators in communicating with the public. Typically offered Fall.

**EDFA 59000 - Individual Research Problems**

Credit Hours: 1.00 to 6.00. (EDST 59000) Opportunities for students to study particular problems under the guidance of a member of the staff. This plan of individualized instruction may be used in any field of education or vocational education. Does not include thesis work. Typically offered Fall Spring Summer.

**EDFA 59100 - Special Topics In Education**

Credit Hours: 1.00 to 4.00. (EDST 59100) Group study of a current problem or special topic of interest to professional educational personnel. Intensive study of research, theory, or practical aspects of a particular issue within the usual graduate class format. Typically offered Fall Spring Summer.

**EDFA 60800 - Business Management In Education**

Credit Hours: 3.00. (EDST 60800) This course explores the management and operation of the school business environment, the critical trends and issues in the field, and the internal and external determinants of school fiscal policy. As applicable, selected core and supplemental content and skills from the district level educator standards of the Indiana Standards for School Leaders are addressed in this course. Emphasis is on the integration of theory and practice. Typically offered Fall Spring Summer.

**EDFA 60900 - Legal Aspects Of American Education**

Credit Hours: 3.00. (EDST 60900) Legal foundations of education as established by constitutional provisions, court decisions, opinions of attorney generals, administrative rulings, and executive directives. Emphasis on legal theory and principles currently in state of change. Stress of case study method of investigation into educational law. Typically offered Fall Spring Summer.

**EDFA 61000 - Supervision Of Instruction And Instructional Personnel**

Credit Hours: 3.00. (EDST 61000) A comprehensive approach to supervision and instruction that develops the knowledge, interpersonal, and leadership skills, which are then applied in a school setting for the purpose of instructional improvement. Models of supervision, leadership and evaluation will be examined to gain knowledge in order to apply effective strategies for diverse situations. The study of transformational change in today's schools will guide leadership knowledge to the task of direct assistance, collegiality, collaboration, culture of trust, professional development, dialectic inquiry, curriculum development and action research. Typically offered Summer Spring.

**EDFA 61300 - Clinic For Educational Leaders**

Credit Hours: 1.00 to 6.00. (EDST 61300) Topics vary. Typically offered Fall Spring Summer.

**EDFA 69500 - Internship In Education**

Credit Hours: 1.00 to 10.00. (EDST 69500) Amount of credit to be determined by nature and extent of the assignment. A special course in selected areas of education, designed to provide practical field experience under professional supervision in selected situations related to the candidate's area of specialization. Typically offered Fall Spring Summer.

**French****FR 10100 - French Level I**

Credit Hours: 3.00. A beginning French course with emphasis on communicative skills (listening and speaking), literacy skills (reading and writing) and culture. Permission of department required. Typically offered Fall Spring Summer. CTL:IWL 1901 French Level I

**FR 10200 - French Level II**

**Prerequisite(s):** FR 10100 FOR LEVEL UG WITH MIN. GRADE OF C- OR FFLP FOR MIN. SCORE OF 150

Credit Hours: 3.00. Continuation of FR 10100. Typically offered Fall Spring Summer. CTL:IWL 1902 French Level II

**FR 10300 - Review Of French Levels I And II**

Credit Hours: 3.00. A review of French 101 and 102. Two or more years of high school French, grades 9 through 12. Typically offered Fall Spring Summer.

**FR 19000 - Special Topics In French**

Credit Hours: 1.00 to 3.00. Special topics related to French and to francophone cultures and literatures. Typically offered Summer Fall Spring.

**FR 20100 - French Level III**

**Prerequisite(s):** FR 10200 FOR LEVEL UG WITH MIN. GRADE OF C- OR FFLP FOR MIN. SCORE OF 300

Credit Hours: 3.00. A lower intermediate French course with emphasis on communicative skills (listening and speaking), literacy skills (reading and writing) and culture. Typically offered Fall Spring Summer. CTL:IWL 1903 French Level III

**FR 20200 - French Level IV**

**Prerequisite(s):** FR 20100 FOR LEVEL UG WITH MIN. GRADE OF C- OR FFLP FOR MIN. SCORE OF 425

Credit Hours: 3.00. Continuation of FR 20100. Typically offered Fall Spring Summer. CTL:IWL 1904 French Level IV

**FR 23000 - French Literature In Translation**

Credit Hours: 3.00. Reading and analysis of selected French writers and their works, with particular emphasis on the social, political, and intellectual climate of their times. The course content will change from semester to semester.

Knowledge of French not required. Typically offered Fall Spring Summer.

**FR 26100 - French Composition**

**Prerequisite(s):** FR 20200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The essentials of French grammar as applied in composition. Typically offered Fall Spring Summer.

**FR 29000 - Special Topics In French**

Credit Hours: 1.00 to 3.00. Special topics related to French and to francophone cultures and literatures. Typically offered Summer Fall Spring.

**FR 30700 - Commercial French**

**Prerequisite(s):** FR 20200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course will provide students with the fundamentals of effective expression and communication as these apply to French business situations. It will concentrate on commercial vocabulary, reading, writing and speaking as related to international business. Typically offered Fall Spring Summer.

**FR 33000 - French Cinema**

Credit Hours: 3.00. A general survey of major French cinematic trends from the earliest examples (Melies, Lumiere) to the New Wave (Chabrol, Truffaut, Resnais, Godard, etc.), with a discussion of the historical, social, political, aesthetic, and literary contexts. The French film in relation to world cinema. The relationship between the French cinema and French literature. Reading and analysis of scripts and historical and critical materials. Knowledge of French not required. Typically offered Fall Spring Summer.

**FR 36500 - French Conversation**

**Prerequisite(s):** FR 20200 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. Intensive practice in French conversation. Pattern practice, preparation and delivery of dialogues and topical talks. Introduction to basic phonetics and practice in pronunciation. Typically offered Fall Spring Summer.

**FR 39000 - Special Topics In French**

Credit Hours: 1.00 to 3.00. Special topics related to French and to francophone cultures and literatures. Typically offered Summer Fall Spring.

**FR 40500 - Introduction To French Literature I**

**Prerequisite(s):** FR 20200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Introduction to the periods of French literature from the beginning through the eighteenth century. Reading and discussion of representative works. The rudiments of literary criticism. Typically offered Fall Spring Summer.

**FR 40600 - Introduction To French Literature II**

**Prerequisite(s):** FR 20200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Introduction to the periods of French literature from the late eighteenth century to the present time. Reading and discussion of representative works. The rudiments of literary criticism. Typically offered Fall Spring Summer.

**FR 40800 - Language Practicum In Business**

**Prerequisite(s):** FR 26100 FOR LEVEL UG WITH MIN. GRADE OF B- AND FR 30700 FOR LEVEL UG WITH MIN. GRADE OF B- AND FR 36500 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. The course will consist of on-the-job experience in international corporations, industry, commerce, government, or health and social agencies where French is used. The course is designed to expose students to their chosen vocational field. Typically offered Fall Spring Summer.

**FR 45000 - French Civilization**

Credit Hours: 3.00. The study of modern French life with emphasis on the customs and daily life of the people. Lectures in the language. Typically offered Fall Spring Summer.

**FR 46100 - Intermediate French Composition**

**Prerequisite(s):** FR 26100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A continuation of FR 26100. In this course, stress is given to the development of more complex grammar and its application in the written language. Emphasis is placed on the structure of composition and basic refinement and precision brought about by grammar and vocabulary. Typically offered Fall Spring Summer.

### **FR 46500 - Intermediate French Conversation**

**Prerequisite(s):** FR 36500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Continued and more advanced practice in French conversation and study of phonetics for accuracy in pronunciation and intonation. Students are encouraged to study contemporary French culture as a basis for their conversations. Typically offered Fall Spring Summer.

### **FR 49000 - Topics In French**

**Prerequisite(s):** FR 20200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Topics vary. Typically offered Fall Spring Summer.

### **FR 49500 - French Senior Capstone Project Course**

Credit Hours: 3.00. The Senior Project is prepared during the second semester of the senior year. Students will work independently under the supervision of a faculty member in consultation with whom they will choose and define their project. The French Senior Project will consist of a research or creative project, an internship, or a portfolio that will show that the student has met the objectives of the French program. Permission of department required. Permission of instructor required. Typically offered Fall Spring Summer.

### **FR 51100 - Advanced French Conversation**

**Prerequisite(s):** FR 46500 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. Additional practice in speaking and understanding French. Extensive listening (outside of class) to recordings of natives from various parts of the French-speaking world. Talks based on this material given in class. Graduate students other than M.A.T. candidates may not include this course in the plan of study. Typically offered Spring Fall Summer.

### **FR 51500 - Advanced French Composition**

**Prerequisite(s):** FR 26100 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. Additional training in writing French. Free and guided composition, as well as direct translation. Special attention to grammatical points where needed. Graduate students other than M.A.T. candidates may not include this course in the plan of study. Permission of department required. Typically offered Spring Fall Summer.

### **FR 54100 - Renaissance French Literature**

Credit Hours: 3.00. Major works in verse and prose of the sixteenth century. Marot, du Bellay, Ronsard, Rabelais, Montaigne. Permission of department required. Typically offered Summer Spring Fall.

### **FR 54200 - The Classical Age**

**Prerequisite(s):** FR 40500 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. The social background and the formation of the classical traits of the seventeenth century in France. Readings from Corneille, Racine, Moliere, and other minor authors. Permission of department required. Typically offered Spring Fall Summer.

### **FR 55800 - French Novel Of The Twentieth Century**

**Prerequisite(s):** FR 40600 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. Consideration of the character, aesthetics, and evolution of the twentieth-century French novel. Readings from such representative novelists as Proust, Gide, Bernanos, Giono, Malraux, Camus, Robbe-Grillet, Saporta. Permission of department required. Typically offered Spring Fall Summer.

### **FR 58100 - French Culture**

Credit Hours: 3.00. Development of the cultural life of the French people as reflected in architecture, art, history, literature, music, and philosophy. Lectures in French. Typically offered Spring Fall Summer.

### **FR 59000 - Directed Reading In French**

Credit Hours: 1.00 to 4.00. Directed readings in French. Permission of instructor required. Typically offered Spring Fall Summer.

## **Geography**

### **GEOG 30500 - American History To 1877**

**Prerequisite(s):** EAS 11000 FOR LEVEL UG WITH MIN. GRADE OF D- OR EAS 22000 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 11000 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 15100 FOR LEVEL

UG WITH MIN. GRADE OF D- OR HIST 15200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This class addresses general topics in the discipline of Geography. It seeks to educate students so that they can consider the spatial dimensions of historical, political, economic, and social themes and problems. In addition, the course seeks to develop the general skills of the discipline, especially those related to cartography. Students receiving credit for this as GEOG class may not also receive credit as a HIST class and vice versa. Typically offered Summer Fall Spring.

## **General Business Health**

### **GBH 20000 - Medical Terminology**

**Prerequisite(s):** ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C OR ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An introductory course which provides an overview of the terminology, including roots, prefixes, and suffixes, used in the medical/health professions fields. The various systems in the body are examined, such as the respiratory system, the cardiovascular system, and the nervous system, and the various parts in each system are identified. In addition, terminology as it relates to various symptoms, ailments and medical procedures is studied. The emphasis will be placed upon pronunciation and spelling of the various terms rather than upon an understanding of the operation of the various systems. Typically offered Fall Spring.

## **General Science**

### **SCI 10300 - Survey Of The Biological World**

Credit Hours: 3.00. This laboratory science course is designed for non-biology majors to satisfy the general education science requirement. Topics in this course include history of planet earth, evolution and natural history of living organisms. This course cannot be used for biology elective credits by biology majors. Typically offered Fall Spring.

### **SCI 10400 - Introduction To Environmental Biology**

Credit Hours: 3.00. A survey of human impacts on natural environments. This course assumes very little prior knowledge in ecology, and thus serves for non-biology major students who wish to satisfy their lab science requirements. Topics include basic concepts of ecology, interactions between human and natural environment, human wellness in relation to environmental pollution, natural resource conservation and management, modern environment technology, and current environmental issues in our society. Lecture material is reinforced and expanded upon in laboratory exercises and field trips in ecology, environmental health, pollution, and resource conservation. This course will not count toward a biology degree. Typically offered Summer Fall.

### **SCI 10500 - Invitation To Human Biology**

Credit Hours: 3.00. This course assumes very little prior specific knowledge of biology, and thus serves for non-biology students who wish to satisfy their lab science requirements. Topics include basic structure and function of the structure of the human body, human genetics, human wellness issues, human evolution, and human impact on the environment. Lecture material is reinforced and expanded upon in laboratory exercises. This course will not count toward a biology degree. Typically offered Summer Spring.

### **SCI 10601 - Food Chemistry**

Credit Hours: 3.00. This course introduces fundamental chemistry concepts and then covers the basic properties of water, protein, carbohydrates, lipids, minerals and vitamins and their roles in food systems. Additionally the course covers enzymes in foods and food additives. Typically offered Fall Spring Summer.

### **SCI 11200 - Introduction To The Physical Sciences I**

Credit Hours: 3.00. An introduction to science and the scientific method as evidenced by the physical and chemical aspects of nature. Physical and chemical concepts and processes will be studied in the context of everyday life. General topics will include: motion, energy, heat, electromagnetism, atoms and molecules. Typically offered Fall Spring Summer.

### **SCI 11300 - Introduction To The Physical Sciences II**

Credit Hours: 3.00. An introduction to science and the scientific method as evidenced by the physical and geological aspects of nature. General topics will include: Planetary geology, chemical concepts of matter including classification, chemical reactions, bonding and energy. Typically offered Fall Spring Summer.

### **SCI 11400 - Introduction to Life Science**

Credit Hours: 3.00. An introduction to life science for non-biology majors. This inquiry-based course will take an investigative approach to various topics in biology that are related to everyday life. Topics include evolution and life history of animals and plants, cells, human health, biotechnology, and ecology. Although offered primarily for elementary education majors, this course is open to all qualified students. This course cannot be counted as biology elective credits for a biology degree. Typically offered Fall.

### **SCI 12200 - Origin Of The Universe**

Credit Hours: 3.00. Fundamental concepts of the evolution of the universe from a scientific viewpoint will be studied. Using basic mathematics skills, Big Bang theory, Black Holes, Particle Accelerators, and the essential principle of physics will be investigated. Typically offered Fall Spring Summer.

### **SCI 13100 - Science And Environmental Issues**

Credit Hours: 3.00. An introduction to the application of chemical principles to the world around us (our environment). It may be used to satisfy the general education laboratory science requirement and serve as an introductory course for further study in the field of environmental science. Typically offered Summer Fall Spring.

### **SCI 14000 - Introduction To Forensic Science**

Credit Hours: 3.00. Introduction to the theories and practices of scientific techniques as applies to crime detection. Some focus areas will include crime scene processing, physical evidence, the examination and evaluation of evidence, and laboratory procedure. Typically offered Summer Fall Spring.

### **SCI 15000 - Brewing Science**

Credit Hours: 3.00. Following the brewing process from "grain-to-glass", this course uses the biological and chemical principles of brewing to teach science to the non-science major. While based solely on malted barley, water, hops, and yeast, beer and the brewing process provide a wealth of examples of basic science. In addition to these basic ingredients, scientific discussions on malting, mashing, fermentation, and the making of different beer styles will also be included. In the laboratory, students will gain hands-on experience with important aspects of the brewing process. An emphasis on the responsibility we must take for our behavior when consuming beer will be stressed. Typically offered Summer Fall Spring.

### **SCI 19000 - Special Topics In Science**

**Prerequisite(s):** MA 11500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Introductory, integrated science course for engineering and science students. Beginning lectures will cover the basic chemistry of life, the organization of cells. This will be followed by more advanced topics such as photosynthesis. Each topic will emphasize how understanding the biological system requires concepts and tools from other disciplines such as chemistry and physics. Permission of instructor required. Typically offered Fall Spring Summer.

### **SCI 20200 - Environmental Science**

Credit Hours: 3.00. This course covers basic issues in environmental sciences including life and environment of the earth, management of renewable and non-renewable resources (air, water, soil, food, minerals, energy, etc.) problems and prevention of pollution, and strategies for sustainable economic development. A multidisciplinary approach, based on teamwork, is emphasized. The course will possibly be team-taught by PUC faculty members. Typically offered Fall Spring.

### **SCI 20300 - Dean's Seminar**

Credit Hours 0.00 to 1.00. Students will meet one hour each week to learn about career opportunities in STEM fields, and be exposed to skills and techniques useful to the students in obtaining a position in the workforce or post-graduate and professional schools. Typically offered Fall Spring Summer.

### **SCI 22000 - Health And Safety**

**Prerequisite(s):** CHM 11600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 2.00. A course on laboratory safety, health related issues and laboratory stockroom management in the physical sciences for science education majors. Typically offered Summer Fall Spring.

### **SCI 29000 - Special Topics In Science**

Credit Hours: 3.00. Introductory, integrated science course for engineering and science students. Beginning lectures will cover the basic chemistry of life, the organization of cells. This will be followed by more advanced topics such as photosynthesis. Each topic will emphasize how understanding the biological system requires concepts and tools from other disciplines such as chemistry and physics. Permission of instructor required. Typically offered Fall Spring Summer.

### **SCI 31500 - Environmental Science For Elementary Education**

**Prerequisite(s):** SCI 11200 FOR LEVEL UG WITH MIN. GRADE OF D- OR SCI 11300 FOR LEVEL UG WITH MIN. GRADE OF D- AND SCI 11400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This project-based course integrates knowledge and skills in physical and biological sciences to develop workable scientific solutions for environmental-related problems in everyday life. Topics may include, but are not limited to, pollution prevention and control, natural resource conservation and management, human health and wellness. Although offered primarily for elementary education majors, this course is open to all qualified students. This course cannot be counted as biology elective credits for a biology degree. Typically offered Fall Spring Summer.

### **SCI 32400 - Physical Science And Society**

Credit Hours: 3.00. This course focuses on the chemicals, chemical and physical principles and phenomena of environmental consequence. Societal issues are incorporated largely in historical relevance. topics include ozone

depletion, greenhouse effect, air pollution, water pollution, acid rain, toxics, energy flow, and environmental technology. Typically offered Fall Spring.

### **SCI 49100 - Environmental Science Internship**

**Prerequisite(s):** NRES 20200 FOR LEVEL UG WITH MIN. GRADE OF D- OR SCI 20200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 1.00 to 3.00. Directed in-service training in government agencies or programs, industry, community organizations, or private-public joint organizations on environment subjects. Typically offered Fall Spring Summer.

## **General Studies**

### **GNS 10300 - Introduction To Higher Education**

Credit Hours: 3.00. Designed to assist and guide students in maximizing their potential for success at the university by promoting academic growth. This course will emphasize utilization of campus resources, goal setting, values exploration, the relationship of academic planning to life goals, career exploration, career exploration, and critical thinking strategies. This course is required of all students in the Developmental Studies Program, except those with credit in GNS 29000 or EDPS 10300. Typically offered Fall Spring Summer.

### **GNS 29000 - Topics For Study**

Credit Hours: 1.00 to 3.00. A variable credit, variable title course for either group or individual study. Typically offered Fall Spring Summer.

### **GS 09000 - Problem Solving Strategies For Successful Reentry**

Credit Hours: 0.00. Developing Problem-Solving Strategies for Successful Reentry provides inmates with a process for change. The program utilizes the problem-solving method to provide the framework for developing plans of action around those issues needed for successful and positive reentry. The program addresses the six major areas necessary for positive reentry: Physical Well-being; Mental Well-being; Personal Well-being; Family Well-being; and Employment and Community Functioning. Typically offered Fall Spring Summer.

### **GS 19100 - First-Year Experience I**

Credit Hours: 3.00. This is a course on broad questions facing in the twenty-first century, approached from a variety of disciplinary perspectives. It serves as the foundation of PNC's general education curriculum. In addition, the practicalities of succeeding in college are addressed: academic expectations, resources available on campus and career planning. Typically offered Fall Spring Summer.

### **GS 32500 - Honors Intensive Study**

Credit Hours: 1.00. Students pursue a research project investigating the history and/or future of their chosen professional field or a topic related to their interests for lifelong learning. Open to students admitted to the PNC Honors Program who have completed at least two honors courses. Permission of Instructor required. Typically offered Fall Spring.

## **German**

### **GER 10100 - German Level I**

Credit Hours: 3.00. A beginning course in German reserved exclusively for students who have had less than two years of German at the ninth-grade level or above. Students with two years or more of previous German study may not take this course for credit. Permission of department required. Typically offered Fall Spring Summer. CTL:IWL 1920 German Level I

### **GER 10200 - German Level II**

**Prerequisite(s):** GER 10100 FOR LEVEL UG WITH MIN. GRADE OF C- OR GFLP FOR MIN. SCORE OF 150

Credit Hours: 3.00. Continuation of GER 10100. Typically offered Spring Summer Fall. CTL:IWL 1921 German Level II

### **GER 10300 - Review Of German Levels I And II**

Credit Hours: 3.00. Required beginning course for students with at least two years of high school German who fail to place into GER 201 or higher. Students passing GER 103 also earn three additional hours of departmental credit (without grade) for GER 101. Two or more years of high school German, grades 9 through 12. Typically offered Fall Spring Summer.

### **GER 20100 - German Level III**

**Prerequisite(s):** GER 10200 FOR LEVEL UG WITH MIN. GRADE OF C- OR GFLP FOR MIN. SCORE OF 300

Credit Hours: 3.00. Readings from the works of nineteenth-century and contemporary German writers; practice in speaking and writing German. Typically offered Fall Spring Summer. CTL:IWL 1922 German Level III

### **GER 20200 - German Level IV**

**Prerequisite(s):** GER 20100 FOR LEVEL UG WITH MIN. GRADE OF C- OR GFLP FOR MIN. SCORE OF 425



Credit Hours: 3.00. Continuation of GER 20100. Typically offered Fall Spring Summer. CTL:IWL 1923 German Level IV

### **GER 23000 - German Literature In Translation**

Credit Hours: 3.00. Reading and analysis of selected German writers and their works, with particular emphasis on the social, political, and intellectual climate of the times. The course content will change from semester to semester. Knowledge of German not required. Typically offered Fall Spring Summer.

### **GER 26100 - German Composition**

**Prerequisite(s):** GER 20200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The essentials of German grammar as applied in composition. Typically offered Fall Spring Summer.

### **GER 30700 - Commercial German**

**Prerequisite(s):** GER 20200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course will provide students with the fundamentals of effective expression and communication as these apply to German business situations in particular. It will concentrate on commercial vocabulary, reading, writing, and speaking as related to international business. Typically offered Fall Spring Summer.

### **GER 33000 - German Cinema**

Credit Hours: 3.00. Viewing and analysis of major German contributions to the cinema from the earliest period to the present. Emphasis on relevant aesthetic theories and on the schools of literature and painting that served as sources. Evaluation of the German film on the basis of social, artistic, and political criteria. Knowledge of German not required. Typically offered Fall Spring Summer.

### **GER 36500 - German Conversation**

**Prerequisite(s):** GER 20200 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. Intensive practice in German conversation. Pattern practice, preparation and delivery of dialogues and topical talks. Introduction to basic phonetics and practice in pronunciation. Typically offered Fall Spring Summer.

### **GER 40500 - Introduction To German Literature I**

**Prerequisite(s):** GER 20200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Survey of German literature from the beginning through the eighteenth century. Reading and discussion of representative works and the fundamentals of literary criticism. Typically offered Fall Spring Summer.

### **GER 40600 - Introduction To German Literature II**

**Prerequisite(s):** GER 20200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A continuation of GER 405 covering the basic German literature survey from the eighteenth century to the present time. Typically offered Fall Spring Summer.

### **GER 40800 - Language Practicum In Business**

**Prerequisite(s):** GER 26100 FOR LEVEL UG WITH MIN. GRADE OF D- AND GER 30700 FOR LEVEL UG WITH MIN. GRADE OF D- AND GER 36500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The course will consist of actual on-the-job experience in international corporations, industry, commerce or government where German is used. The course is designed to expose students to their chosen vocational field. Typically offered Fall Spring Summer.

### **GER 45000 - German Civilization**

**Prerequisite(s):** GER 20200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The study of modern German life with emphasis on the customs and daily life of the people. Lectures in the language. Typically offered Fall Spring Summer.

### **GER 46100 - Intermediate German Composition**

**Prerequisite(s):** GER 26100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A continuation of GER 261. In this course, stress is given to the development of more complex grammar and its application in the written language. Emphasis is placed on the structure of composition and basic refinement and precision brought about by grammar and vocabulary. Typically offered Fall Spring Summer.

### **GER 46500 - Intermediate German Conversation**

**Prerequisite(s):** GER 36500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Continued and more advanced practice in German conversation and the study of phonetics for

accuracy in pronunciation and intonation. Students are encouraged to study contemporary German culture as a basis for their conversations. Typically offered Fall Spring Summer.

### **GER 49000 - Topics In German**

**Prerequisite(s):** GER 20200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Topics vary. Typically offered Fall Spring Summer.

### **GER 54200 - German Classicism**

Credit Hours: 3.00. The study of the classical period in German literature as revealed in the works of Goethe and Schiller. Typically offered Spring Fall Summer.

### **GER 54300 - The Age Of Enlightenment And The Storm And Stress Movement**

Credit Hours: 3.00. A study of the literature of the Age of Enlightenment, the cult of feeling, and the Storm and Stress works of Goethe and Schiller. Typically offered Spring Fall Summer.

### **GER 54500 - German Prose From Naturalism To The Present**

**Prerequisite(s):** GER 40600 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. Development of the novel and short story of the period, with special emphasis on the major authors. Typically offered Spring Fall Summer.

### **GER 54600 - German Literature Since 1945**

**Prerequisite(s):** GER 40600 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. Major literary movements and tendencies in East and West Germany, Austria, and Switzerland since 1945. Involves the close reading of literary texts, investigation of major problems addressed by literary criticism, and discussion of historical context. Typically offered Spring Fall.

### **GER 55400 - German Drama Before Naturalism**

Credit Hours: 3.00. German drama from its beginnings up to the advent of Naturalism. A study of the most significant German dramatists of the first part of the nineteenth century and earlier periods. Typically offered Spring Fall Summer.

### **GER 55500 - German Drama From Naturalism To The Present**

**Prerequisite(s):** GER 40600 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. Developments of the drama through the various literary movements of the period, including consideration of the underlying social and ideological forces. Typically offered Spring Fall Summer.

### **GER 58100 - German Culture**

Credit Hours: 3.00. The development of the cultural life in German-speaking lands as reflected in architecture, art, history, literature, music, and philosophy. Lectures in German. Typically offered Spring Fall Summer.

### **GER 59000 - Directed Reading In German**

Credit Hours: 1.00 to 4.00. Directed readings in German. Permission of instructor required. Typically offered Spring Fall Summer.

## **Graduate Studies**

### **GRAD 59000 - Special Topics**

Credit Hours: 1.00 to 3.00. Hours and credits to be arranged. For the use of interdisciplinary programs and in other situations when appropriate departmental courses are not available or general Graduate School identification is desirable. To be used only with the consent of the dean of the Graduate School. Typically offered Fall Spring Summer.

## **Greek**

### **GREK 10100 - Ancient Greek Level I**

Credit Hours: 3.00. Introduction to the grammar of Attic Greek of the Classical period, and first forays into the reading of connected prose. Emphasis on accidence, syntax, and vocabulary building. Typically offered Fall Spring.

### **GREK 10200 - Ancient Greek Level II**

**Prerequisite(s):** GREK 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Continuation of the study of Attic Greek grammar and reading of connected prose of the Classical period. Typically offered Fall Spring.

## **Hebrew**

### **HEBR 10100 - Modern Hebrew Level I**

Credit Hours: 3.00. Introduction to Modern Hebrew: the writing and sound systems, and systematic presentation of basic structures. All language skills - reading, writing, speaking, and comprehension - are emphasized. No previous knowledge of Hebrew required. Typically offered Fall Spring.

### **HEBR 10200 - Modern Hebrew II**

**Prerequisite(s):** HEBR 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Continuation and extension of the first semester. The course aims to develop fluency in reading, comprehension, and spoken language. Knowledge of grammar and vocabulary is expanded. Typically offered Spring.

## **Health and Kinesiology**

### **HK 27200 - Health, Safety And Nutrition For Young Children**

Credit Hours: 3.00. Explores the health and safety needs of young children as incorporated in early childhood settings. Examines the connection between proper nutrition, health and child development. Introduction to the community resources available for promoting healthy development. Presents methods and materials for sharing health, safety and nutrition information with children and families. Typically offered Summer Fall Spring.

### **HK 32200 - Physical Education In The Elementary School**

**Prerequisite(s):** EDPS 23500 FOR LEVEL UG WITH MIN. GRADE OF C AND EDPS 26500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 2.00. Current conceptions of elementary school physical education, with a particular emphasis on curriculum implementation. Typically offered Summer Fall Spring.

### **HK 32400 - Health, Wellness, And Physical Education**

Credit Hours: 3.00. Current conceptions of elementary school physical education, physical health, mental health and wellness, and safety of the school-aged child are considered. Particular emphasis on ways in which the elementary teacher meets his or her responsibilities for promoting pupil health, and how this is implemented into the curriculum are explored. Typically offered Fall Spring.

## **Health Sciences**

### **HSCI 10500 - Facts Of Life**

Credit Hours: 3.00. The study of the human body in health and disease. Topics include basic structure and function of the human body and an overview of human biology related to genetics, evolution, impact on the environment, and human wellness issues. Career opportunities will be discussed. Typically offered Fall.

### **HSCI 20000 - Preceptorship In The Medical Sciences**

Credit Hours: 0.00. The course is designed to provide a pre-professional school experience for students seeking careers in fields such as medicine, dentistry and physical therapy. Individual programs will be designed by the health professional advisor, the student and a practicing health professional. The student will spend one week in a clinical study under the direction of health professionals. Such units as hospital rotations, dental office experience, government health office experience, etc., will be included. A written report of the experience will be made to the advisor and cooperating health professionals. Typically offered Fall Spring.

### **HSCI 23000 - Introduction To Paramedicine**

Credit Hours: 3.00. This course includes instruction in the roles and responsibility of the paramedic, orientation to the hospital and field settings, medical legal aspects of care, patient assessment, trauma management, management of stress and behavioral emergencies, pastoral care orientation, pre-hospital scene management, universal precautions, hazardous materials identification and response. Typically offered Fall Spring Summer.

### **HSCI 23100 - Pathophysiology of Disease States**

Credit Hours: 4.00. The pathophysiology, assessment and treatment of shock as well as review of fluid and electrolyte abnormalities in medical emergencies will be examined. Typically offered Fall Spring Summer.

### **HSCI 23200 - Introduction To Anatomy And Physiology**

Credit Hours: 4.00. Review of topographical anatomy, cellular anatomy and physiology, and human organ systems. Emphasis on medical terminology will be stressed. Typically offered Fall Spring Summer.

### **HSCI 23300 - Emergency Pharmacology**

Credit Hours: 4.00. Emphasis of this course is therapeutic effects, indications, contra-indications, route of administration, dosages, and side effects of medications used in the pre-hospital setting. Techniques of venipuncture, intravenous cannulation, percutaneous injection, arterial blood gas analysis, nasogastric intubation and urinary catheterization are taught. Typically offered Fall Spring Summer.

### **HSCI 23400 - Cardiopulmonary Emergencies**

Credit Hours: 4.00. Pathophysiology, assessment, and treatment of cardiopulmonary emergencies are discussed. Fundamentals of air way management, electrocardiology, and interpretation of a normal and abnormal ECG patterns are studied. Effect of medications on the cardiopulmonary system is emphasized. Typically offered Fall Spring Summer.

### **HSCI 23500 - Medical and Environmental Emergencies**

Credit Hours: 4.00. Topics discussed include neurological, environmental, pediatric, obstetric, gynecological, endocrine and toxicological emergencies. Special emphasis on the needs of the geriatric, psychiatric, and communicable disease patient will be stressed. Typically offered Fall Spring Summer.

### **HSCI 23600 - Advanced Life Support**

Credit Hours: 4.00. American Heart Association cardiopulmonary resuscitation standards, advanced cardiac life support lectures and practical skills stations will be taught. Advanced cardiac life support certification will be achieved. Typically offered Fall Spring Summer.

### **HSCI 23700 - Prehospital Search and Rescue**

Credit Hours: 1.00. The course provides classroom and field experiences designed to expose the student to effective search and rescue operations. Concepts explored include incident command, disaster triage techniques, principles of extrication, water, high rise and confined space rescue. Typically offered Fall Spring Summer.

### **HSCI 23800 - Clinical Experience I**

**Prerequisite(s):** HSCI 23000 FOR LEVEL UG WITH MIN. GRADE OF D- AND HSCI 23100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 1.00. This course provides the clinical setting to correlate the knowledge objectives from introduction to paramedicine and pathophysiology of emergency disease states. Included are rotations in the emergency department, social services, behavioral treatment center, pastoral care and pathology. Typically offered Fall Spring Summer.

### **HSCI 23900 - Clinical Experience II**

**Prerequisite(s):** HSCI 23800 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 1.00. A continuum of Clinical Experience I with an emphasis on invasive techniques in critical care units. Rotations in the emergency department, clinical laboratory (including morgue), surgery, anesthesiology, cardiovascular, and medical intensive care units are provided. Exposure to cardiac catheterization and telemetry is included. Typically offered Fall Spring Summer.

### **HSCI 24000 - Clinical Experience III**

**Prerequisite(s):** HSCI 23800 FOR LEVEL UG WITH MIN. GRADE OF D- AND HSCI 23900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 2.00. Students will be rotated through pediatrics, nursery, obstetrics, neuro surgical intensive care unit, physical medicine and rehabilitation. Geriatric extended care facility, a continuation of emergency department, critical care units and sampling of other hospital-based speciality care areas will be included. Typically offered Fall Spring Summer.

### **HSCI 24100 - Field Internship I**

Credit Hours: 1.00. In this course students are assigned to paramedics in the pre-hospital setting, performing assessment, treatment, documentation and pre-hospital field communications under direct supervision. Typically offered Fall Spring Summer.

### **HSCI 24200 - Field Internship II**

**Prerequisite(s):** HSCI 24100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 2.00. A continuum of HSCI 241 with an emphasis on invasive techniques in the pre-hospital setting. Advanced cardiac and respiratory assessment and management including endotracheal intubation, intravenous cannulation and medication administration will be performed with the guidance of the paramedic preceptor. Typically offered Fall Spring Summer.

### **HSCI 24300 - Field Internship III**

**Prerequisite(s):** HSCI 24100 FOR LEVEL UG WITH MIN. GRADE OF D- OR HSCI 24200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 2.00. A continuum of HSCI 241-242. The emphasis of this course is to provide the student an opportunity to refine the proficiency of previously learned skills and to synthesize all knowledge as it relates to the patient with an emergent pre-hospital need. The student at this point should be able to assess and perform appropriate interventions and therapy for all patients and situations to which they are exposed. The student will be placed in the position of team leader and primary care paramedic with the direct supervision of the paramedic preceptor. Typically offered Fall Spring Summer.

### **HSCI 24400 - Patient Assessment**

**Prerequisite(s):** HSCI 23200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. Techniques of the physical exam will be demonstrated and practiced in this course, with special emphasis on organ systems as they are being studied. Relating the physical exam to the clinical impression will also be emphasized. Students will be assigned to physician preceptors. Typically offered Fall Spring Summer.

### **HSCI 25200 - Clinical Chemistry**

Credit Hours: 1.00 to 10.00. Clinical Chemistry. Typically offered Fall Spring.

### **HSCI 25300 - Clinical Hematology**

Credit Hours: 1.00 to 10.00. Clinical Hematology. Typically offered Fall Spring.

### **HSCI 25400 - Clinical Immunohematology**

Credit Hours: 1.00 to 10.00. Clinical Immunohematology. Typically offered Fall Spring.

### **HSCI 25500 - Clinical Microbiology**

Credit Hours: 1.00 to 10.00. Clinical Microbiology. Typically offered Fall Spring.

### **HSCI 25700 - Clinical Parasitology And Mycology**

Credit Hours: 1.00 to 10.00. Clinical Parasitology And Mycology. Typically offered Fall Spring.

### **HSCI 25800 - Clinical Serology**

Credit Hours: 1.00 to 10.00. Clinical Serology. Typically offered Fall Spring.

### **HSCI 26000 - Clinical Urinalysis And Body Fluid**

Credit Hours: 1.00 to 10.00. Clinical Urinalysis And Body Fluid. Typically offered Fall Spring.

### **HSCI 29000 - Special Topics**

Credit Hours: 1.00 to 8.00. Special topics, projects, or readings in selected areas of health sciences at a level appropriate for sophomore students. Permission of instructor required. Typically offered Summer Fall Spring.

### **HSCI 45100 - Clinical Biochemistry**

Credit Hours: 1.00 to 10.00. This course is designed to provide principles of biochemistry for clinical application for medical technologists. The course encompasses an introduction to carbohydrate, amino acid, and lipid metabolism. Also included are lectures on basic endocrinology, enzymes, and biosynthesis of steroid hormones. Physiological principles are stressed with respect to liver, lung, and kidney function. Special emphasis is placed on correlation of the theoretical and clinical areas. Typically offered Fall Spring.

### **HSCI 45200 - Clinical Chemistry**

Credit Hours: 1.00 to 10.00. This course is designed to provide the medical technologist with the principles and application of clinical chemistry. Methods of instrumental analysis include a variety of automated procedures, electrophoresis, immunoelectrophoresis, immunodiffusion, radioisotopes, steroids, hormone assay, and toxicology. Quality control for clinical chemistry is included. Supervised clinical laboratory experience is offered, with students rotating through the various areas of clinical chemistry on a sequential rotational basis. Typically offered Fall Spring.

### **HSCI 45300 - Clinical Hematology**

Credit Hours: 1.00 to 10.00. Study of the functions, maturation, and morphology of blood cells. Blood cells, platelets, and reticulocyte counting procedure. Experiences in the study of cellular content of other body fluids are offered. Lectures and laboratory are designed to teach techniques of sedimentation rates, hematocrits, corpuscular indices, hemoglobin red cell fragility, and special staining procedures. Also, routine and special coagulation studies are taught. Supervised experience in clinical hematology offers opportunities for study in routine and special hematology and coagulation procedures. Typically offered Fall Spring.

### **HSCI 45400 - Clinical Immunohematology**

Credit Hours: 1.00 to 10.00. A review of serologic principles and technical fundamentals of transfusion practice; a comprehensive consideration of all blood groups, with emphasis on ABO and Rh-Hr blood group systems. Extensive practice is gained in pre-transfusion techniques and antibody identification in the laboratory. Other blood types and antigen-antibody relationships are taught in laboratory and lectures. Also included are blood donor room procedures; preparation of blood components; correlation of blood component therapy with disease states; quality control of all reagents, procedures, and equipment used; and laboratory safety measures, all of which offer the best patient care and protection of laboratory personnel. Typically offered Fall Spring.

### **HSCI 45500 - Clinical Microbiology**

Credit Hours: 1.00 to 10.00. Lectures and clinical laboratory experience in diagnostic procedures as aids to the diagnosis of human disease. Proper selection of techniques for the isolation and identification of medically important bacteria. Special emphasis is placed on newer methods for anaerobic bacteria identification. Also includes lectures and laboratory identification in the fields of mycology and microbacteriology, with emphasis on isolation and identification. Practical applications of fluorescent antibody tests are performed. Typically offered Fall Spring.

### **HSCI 45600 - Clinical Nuclear Medicine And Radioisotopes**

Credit Hours: 1.00 to 10.00. Lectures and clinical rotation designed to familiarize the medical technology student with the terminology, instrumentation, dosages, and "in vitro" and "in vivo" rationale and procedures pertinent to a nuclear medicine department. Typically offered Fall Spring.

### **HSCI 45700 - Clinical Parasitology**

Credit Hours: 1.00 to 10.00. Techniques of specimen examination, identification of cysts and ova, life cycles of parasites. Typically offered Fall Spring.

### **HSCI 45800 - Clinical Serology**

Credit Hours: 1.00 to 10.00. Lectures and a laboratory experience in serology, including the preparation of antigen, flocculation tests for syphilis, heterophile antibody tests, creative proteins, RA test, FTA, rubella testing. Also included are lectures in immunology that include classifications of immunoglobulins; mechanism of antibody formation;

immune response; types of antigen-antibody reactions; and theories of radioimmunoassay. Typically offered Fall Spring.

### **HSCI 45900 - Clinical Toxicology**

Credit Hours: 1.00 to 10.00. A basic orientation in the use of instrumentation, such as mass spectrophotometry, and liquid and gas chromatography that is used in the specialized toxicology laboratory. Typically offered Fall Spring.

### **HSCI 46000 - Clinical Urinalysis**

Credit Hours: 1.00 to 10.00. Routine analysis, chemical tests, sediment identification, renal function tests, pregnancy tests. Typically offered Fall Spring.

### **HSCI 46100 - Clinical Virology**

Credit Hours: 1.00 to 10.00. Techniques involved in the performance of virologic studies for rubella, influenza, mumps, Newcastle disease, herpes, polio, and hepatitis. Tissue cultures are maintained for primary virus isolation. Typically offered Fall Spring.

### **HSCI 46200 - Clinical Cytology**

Credit Hours: 1.00 to 10.00. Lectures and laboratory experience in examination of body fluids: e.g., spinal fluid, synovial fluid, and seminal fluid. Lectures on the use and application of various types of microscopy. Typically offered Fall Spring.

### **HSCI 46300 - Clinical Histology**

Credit Hours: 1.00 to 10.00. Histologic technique (principles of dehydration, embedding, sectioning, routine staining, frozen sections, decalcification, exfoliative cytology). Typically offered Fall Spring.

### **HSCI 46400 - Clinical Anatomy And Physiology**

Credit Hours: 1.00 to 10.00. Review of the structure and function of the systems most concerned with laboratory tests: heart, kidney, liver, hematopoietic system, etc. Typically offered Fall Spring.

## **Health Studies**

### **HST 11000 - Orientation To Sports Health**

Credit Hours: 2.00. Overview of the basic prevention, assessment, and management techniques for athletic injuries. Students will be instructed in the basic policies and procedures of a variety of health disciplines and how each discipline is connected to Sports Health. Typically offered Fall Spring.

### **HST 20000 - Medical Terminology**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An introductory course which provides an overview of the terminology, including roots, prefixes, and suffixes, used in the medical/health professions fields. The various systems in the body are examined, such as the respiratory system, the cardiovascular system, and the nervous systems, and the various parts in each system are identified. In addition, terminology as it relates to various symptoms, ailments, and medical procedures is studied. The emphasis will be placed upon pronunciation and spelling of the various terms rather than upon an understanding of the operation of the various systems. Typically offered Fall Spring.

### **HST 21000 - First Responder: First Aid And Emergency Care**

**Prerequisite(s):** HST 11000 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 21300 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) AND BIOL 21400 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. The students will learn consistent and universal guidelines that enable first responder rescuers (athletic trainers) to be able to respond to and provide appropriate care, regardless of the type of emergency. Classroom and practice sessions introduce the acute athletic injury care environment, as well as traumatic emergency triage, and the primary principles of first aid, spinal injury management, and emergency action plan creation and application. Typically offered Fall Spring Summer.

### **HST 21800 - Human Development And Health Promotion**

Credit Hours: 3.00. (NUR 21800) This course develops the knowledge required to effectively promote health throughout the lifespan. Theory and evidence-based developmental influences and challenges are addressed. Permission of department required. Typically offered Fall Spring Summer.

### **HST 22000 - Concepts Of Fitness**

**Prerequisite(s):** BIOL 21300 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) AND BIOL 21400 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 1.00. The purpose of this course is to provide knowledge and appreciation of the importance of regular physical activity for life-long health, wellness, and a quality of life and to provide opportunities for psychomotor development. Typically offered Fall Spring Summer.

### **HST 22200 - Introduction To Holistic Health And Wellness**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. The foundations of health and wellness from a holistic perspective are discussed. Theoretical foundations and modality techniques of complementary and alternative medicine are discussed and practiced. Typically offered Fall Spring Summer.

### **HST 25000 - Prevention And Care Of Athletic Injuries**

**Prerequisite(s):** HST 11000 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 21300 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 21400 FOR LEVEL UG WITH MIN. GRADE OF D- AND GBH 20000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 2.00. This course is designed to introduce the necessary skills and competencies required for treatment of basic athletic injuries. This course will include the study of modern theories and principles of athletic training mechanisms as well as the nature and causes of the most common sports-related injuries. Typically offered Fall Spring.

### **HST 30300 - Principles Of Health Insurance**

**Prerequisite(s):** ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF C OR ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course consists of an introduction and overview of health insurance form preparation, filing, refiling, maintaining and follow up. Several types of insurance forms -Universal Medical (HIC), Superbills, Worker Compensation, Medicare, Medicaid, HMOs - will be covered. This course is supplemented by several hands-on experience activities and sample forms with the latest information on electronic claims, and hospital and physician billing especially related to Medicare and Medicaid.. Typically offered Fall.

### **HST 31300 - Essentials of Nutrition**

Credit Hours: 3.00. Credit not given for both HST31300 and FN30300 or F&N315. Basic nutrition and its application in meeting nutritional needs of all ages. Typically offered Fall Spring Summer. CTL: IHP 1402 Human Nutrition.

### **HST 33000 - Human Sexuality**

**Prerequisite(s):** BIOL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- OR BIOL 21400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course explores physiological, anatomical, medical, social cultural, and genetic topics in human sexuality. There is a particular emphasis on the biology of sexuality. Typically offered Fall Spring Summer.

### **HST 34900 - Contemporary Trends In Health Care Systems**

Credit Hours: 3.00. This course provides an overview of the contemporary health care system in the United States. Cultural and ethnic diversity, and health beliefs and practices are emphasized. The influence of global health care systems on the US health care system is explored. Permission of department required. Typically offered Summer Fall Spring.

### **HST 35000 - Biomechanics And Structural Kinesiology**

**Prerequisite(s):** BIOL 21300 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 21400 FOR LEVEL UG WITH MIN. GRADE OF D- AND GBH 20000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course looks at the analysis of structural principles and mechanical application pertaining to human movement. Course will discuss concepts of human movement with investigation of biomechanics and structural kinesiology. Efficiency of movement, neuromuscular integration, proprioception, mechanical concepts related to muscular function, and analysis of human motion/motor skills will be extensive. Typically offered Fall Spring Summer.

### **HST 35300 - Health Care Informatics**

Credit Hours: 3.00. (NUR 35300) A comprehensive approach to information technology is examined. Major concepts in health care informatics, trends, innovative strategies, and applications are introduced. Permission of department required. Typically offered Fall Spring Summer.

### **HST 35500 - Thanatology**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course introduces the student to thanatology; the study of death and dying. Students will develop an understanding of the broad, interdisciplinary nature of thanatology and will explore attitudes and experiences of death. Typically offered Fall Spring Summer.

### **HST 35800 - Cultural Diversity In Health And Illness**

Credit Hours: 3.00. This course prepares students to understand the variety of viewpoints and concepts related to illness in a variety of cultures. The need for providing culturally appropriate health care is explored and emphasized. Typically offered Fall Spring Summer.

### **HST 36000 - Exercise Physiology**

**Prerequisite(s):** BIOL 21300 FOR LEVEL UG WITH MIN. GRADE OF D- AND BIOL 21400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Exercise physiology is an evaluation of the acute responses and some chronic adaptations of the body to the stresses of exercise. Typically offered Fall Spring Summer.

### **HST 37800 - Aging In A Modern Society**

Credit Hours: 3.00. Issues of aging are explored to understand aging in the modern society. Processes of aging and aging stages of life are identified. Typically offered Fall Spring Summer.

### **HST 40000 - Advanced Sports Health**

**Prerequisite(s):** BIOL 21400 FOR LEVEL UG WITH MIN. GRADE OF D- AND HST 25000 FOR LEVEL UG WITH MIN. GRADE OF D- AND HST 35000 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) AND HST 36000 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 2.00. This course integrates professional aspects of athletic training, including collaborating with other health professionals. There will be a focus on relations organizations and the administration of an athletic training program. Typically offered Fall Spring Summer.

### **HST 44700 - Health Studies Capstone**

Credit Hours: 1.00 - 3.00. This is a synthesis course designed to give students the opportunity to utilize the information and skills learned during their health studies degree to solve real world problems within the area of health care. Typically offered Fall Spring Summer.

### **HST 44800 - Stress Management**

Credit Hours: 3.00. The impact of stress upon the psychological function of the body will be examined. The exploration and interaction of a variety of stress management techniques will be explored. Typically offered Fall Spring Summer.

## **History**

### **HIST 10101 - Introduction To Historical Studies**

Credit Hours: 3.00. Introduces the student to the way in which historians pose questions, conduct research, and interpret their work into conclusions. Designed for non-majors. Typically offered Fall Spring Summer.

### **HIST 10200 - Introduction To The Ancient World**

Credit Hours: 3.00. A history of the ancient world (Near East, Greece, and Rome) from its prehistoric origins to its dismemberment in the early Christian era. It is designed to meet the needs of the beginning student of European and world history. Typically offered Fall Spring Summer.

### **HIST 10300 - Introduction To The Medieval World**

Credit Hours: 3.00. Barbarians, kings, queens, peasants, witches, saints, teachers, students, heretics, Moslems, Jews, Christians, love, death, monks, farm life, city life, ordinary men, women, and children as Europe develops from A.D. 500 to 1500. Typically offered Fall Spring Summer.

### **HIST 10400 - Introduction To The Modern World**

Credit Hours: 3.00. Traces the historical, political, and geographical expansion of European society and culture into the Americas, Africa, and Asia. Examines such topics as the major political revolutions, nationalism, the development of the European states, and the environmental impact from the era of the Reformation to the present. Typically offered Fall Spring Summer.

### **HIST 10500 - Survey Of Global History**

Credit Hours: 3.00. A survey of the interaction between the civilizations of Asia, Africa, Europe, and the Americas since 1500, with attention to cultural comparisons over time, and to the implications of global interdependence for the environment, health, economy, and geopolitics. Typically offered Fall Spring Summer.

### **HIST 10600 - Introduction To History And Social Studies**

Credit Hours: 3.00. This course is designed as both the introductory course for History Majors and Social Studies Education Majors and fulfills the general education requirement for the "freshman experience" class. It is designed to provide the basic tools of college-level reading and writing needed to become effective historians and social Studies teachers. Typically offered Fall Spring.

### **HIST 11000 - The Pre-Modern World**

Credit Hours: 3.00. A survey of the ancient and medieval periods from late prehistoric times to the 17th century. Major emphasis is placed on ancient civilizations, the development and flowering of medieval, political, religious, economic and cultural institutions in Western and non-Western societies; the impact of geographic and environmental factors in the historic, social, and cultural changes, and the dawn of modern times. Typically offered Fall Spring Summer.

### **HIST 15100 - American History To 1877**



Credit Hours: 3.00. A study of the development of American political, economic, and social institutions from the early explorations and colonial settlements through Reconstruction. Typically offered Fall Spring Summer. CTL:ISH 1010 American History I

### **HIST 15200 - United States Since 1877**

Credit Hours: 3.00. A study of the growth of the United States from 1877 to the present. The new industrialism, agrarian problems, depression, the New Deal, the two world wars, the Cold War, and similar topics are analyzed. Typically offered Fall Spring Summer.

### **HIST 21500 - Sub Sahara Africa**

Credit Hours: 3.00. A survey of Sub Sahara African history which traces the development of this part of Africa from prehistoric times to the present. Major emphasis is directed toward recognizing the importance of Africa and Africans in history and pre-history. A brief survey of the early history of Africa, the Middle Age of African history with Africa's rich cultural and artistic heritage, the nature of African political systems, the rise and decline of the powerful kingdoms and empires, the era of the Atlantic Slave Trade, the colonial period, nationalist movements, and the diverse economic and political systems that have developed in post independence Africa. Typically offered Summer Fall Spring.

### **HIST 22800 - English History To 1688**

Credit Hours: 3.00. This course is designed to survey the growth and development of English society from its beginning through the seventeenth century. Emphasis is put upon those institutions and events that influenced the establishments of the English legal system. Typically offered Fall.

### **HIST 22900 - English History Since 1688**

Credit Hours: 3.00. A continuation of HIST 22800. Emphasis is placed upon Great Britain as a world and imperial power. Attention is given particularly to the industrial revolution, the growth and achievements of democratic institutions, and the role Britain has played in Western civilization in recent times. Typically offered Spring.

### **HIST 23100 - Introduction To United States Foreign Policy**

Credit Hours: 3.00. This course is designed to introduce students to the major themes and issues in the contemporary history of United States foreign policy. Lectures, discussions and readings will examine such areas as United States relationships with the major powers, the Third World and international organizations. Students with credit in Pol 231 may not receive credit for this class. Typically offered Summer Fall Spring.

### **HIST 24500 - Introduction To The Middle East History And Culture**

Credit Hours: 3.00. A survey of the civilization of the Middle East from the rise of Islam to the present. The political, social, and cultural institutions are examined along with the problem of adjusting these to the pressure of Western civilization in the last two centuries. Typically offered Fall Spring.

### **HIST 27100 - Introduction To Colonial Latin American History (1492-1810)**

Credit Hours: 3.00. A survey of Latin American history from its origins to the end of the major movements toward independence with emphasis on discovery, colonization and the transfer from Spain and Portugal from 1492 to 1810. Typically offered Fall Spring Summer.

### **HIST 27200 - Introduction To Modern Latin American History (1810 To The Present)**

Credit Hours: 3.00. A survey of Latin American history from Independence (1810) to the present with particular attention on political, economic and social problems connect with modernization. Typically offered Fall Spring Summer.

### **HIST 29000 - Russia: Yesterday, Today, And Tomorrow**

Credit Hours: 3.00. A comprehensive, interdisciplinary view of Russia, stressing those issues in the political, economic, technological, and cultural spheres that are most relevant to the current situation. This team-taught course is open to beginning undergraduates. Typically offered Fall Spring.

### **HIST 29500 - Research And Writing In History**

Credit Hours: 3.00. This course is designed to train history majors in the fundamentals of historical research and writing. IT or HIST 58200 -The Art of History- is required of all History majors. Typically offered Fall Spring Summer.

### **HIST 29501 - Introduction To Historiography**

Credit Hours: 3.00. An introduction to historiography and methodology of being a historian. Examines various interpretative approaches available to historians and reviews the subjects and methods prevalent among social/cultural, labor, military, ethnic, political, and gender historians. Only open to majors. Typically offered Fall Spring Summer.

### **HIST 30100 - Episodes in American Religious History**

Credit Hours: 3.00. Introduces students to the study of religion in the United States by focusing on particular groups or movements. Each religious episode is placed in the appropriate historical context and in relation to other religious experiences and expressions. Subjects vary but could include Puritanism, Mormonism, and twentieth-century popular religion. Typically offered Fall Spring Summer.

### **HIST 30301 - History Of Latin America**

Credit Hours: 3.00. This course explores Latin American history from its pre-Columbian origins to the early 21st century, with particular attention paid to indigenous societies, the Iberian conquest and colonial legacy, transculturation, republican government, foreign intervention, nationalism, revolution, neoliberalism and identity politics and culture. Typically offered Fall Spring Summer.

### **HIST 30501 - Latin American History Through Film**

Credit Hours: 3.00. Selected topics on Latin America's past as depicted through films from the US and Latin America. Lectures, readings and films in English or in Spanish with English subtitles. Typically offered Fall Spring Summer.

### **HIST 30600 - The United States In 1960's**

**Prerequisite(s):** HIST 15100 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 15200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A description and analysis of major domestic and foreign, social, political, military, and diplomatic issues confronting the United States in the 1960's and approaches and efforts to resolve these issues. The class will utilize the 1960's as a laboratory to provide students with both historical and political science skills and approaches to the issues and themes of a particular period. May be taken for history or political science credit. Typically offered Fall Spring Summer.

### **HIST 30800 - Britain And The Empire**

**Prerequisite(s):** HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course will examine Britain and her empire from the reign of Queen Victoria through the career of Margaret Thatcher. It will investigate the political, economic and social role of the imperial power and explore how various subject peoples reacted. Typically offered Fall Spring Summer.

### **HIST 30900 - The Middle East**

**Prerequisite(s):** HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A survey beginning with the period of European involvement in the Ottoman Empire up to the present. The course includes the study of political Zionism and Arab nationalism, the role of the major powers between the two World Wars and that of the United States and the Soviet Union during the Cold War, and the developments in the Middle East in the post-Cold War era. Typically offered Fall Spring Summer.

### **HIST 30901 - History Of Iraq And Jordan**

Credit Hours: 3.00. This course will cover the history of Iraq and Jordan from the creation of the two Hashemite Monarchies after World War I through the beginning of the 21st century. The course will examine the relationship of both states with Britain, the United States, Israel and the Arab world. In addition, the course will focus attention on Arab leaders, including King Hussein and Saddam Hussein. Typically offered Fall, Spring, Summer.

### **HIST 31000 - Historical Geography**

**Prerequisite(s):** HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D OR HIST 11000 FOR LEVEL UG WITH MIN. GRADE OF D OR HIST 15100 FOR LEVEL UG WITH MIN. GRADE OF D OR HIST 15200 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Survey of historical geography. Typically offered Fall Spring Summer.

### **HIST 31005 - The Civil War And Reconstruction, 1850 To 1877**

Credit Hours: 3.00. A survey of the American Civil War and Reconstruction, covering the intense sectional conflict of the 1850s; the military, social, economic, and political aspects of the war; and the political and economic reconstruction that followed. Typically offered Fall Spring.

### **HIST 31100 - WW II And Hollywood**

**Prerequisite(s):** HIST 15100 FOR LEVEL UG WITH MIN. GRADE OF D OR HIST 15200 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Hollywood films about World War II combined patriotism and the glories of the American way of life with anti-Nazi and anti-Japanese propaganda. By studying these films one can more clearly understand the American mind of the 1940's, something of the need of a common experience that became central to the lives of the American peoples. Typically offered Fall Spring Summer.

### **HIST 31300 - Modern Germany**

**Prerequisite(s):** HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Defines the nature of medieval Holy Roman Empire in the early modern era. Examines after 1806 the development of German nationalism and the unification movements; the position of the Germans of Austria; the period of German unity under the Hohenzollerns, Wimar Republic, and Hitler; and the post-World War II division and reunification of Germany. Typically offered Fall Spring Summer.

### **HIST 31400 - Modern Russia**

**Prerequisite(s):** HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Analyzes the development of the modern Russian territorial state and its civilization from the pre-Petrine Era through the rise and eclipse of the Communist regime. Typically offered Fall Spring Summer.

### **HIST 31500 - Modern Nationalism**

**Prerequisite(s):** HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Analyzes the nature and development of modern nationalism as a force of integration and disintegration in various major European and non-European states. Typically offered Fall Spring Summer.

### **HIST 31600 - History Of Architecture II**

**Prerequisite(s):** HIST 15100 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 15200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The study of Western architecture of the eighteenth, nineteenth and twentieth centuries with an emphasis on the related structural, technological, socioeconomic and cultural influences that contributed to the architectural expressions of these periods. (Not open to students with credit in ARET 31000). Typically offered Fall Spring Summer.

### **HIST 31900 - The History Of Modern Israel**

**Prerequisite(s):** HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course will cover the history of political Zionism, the establishment of the state of Israel, and the economic, social, and political development of the country from 1948 until the present. It also will examine the Arab-Israeli conflict and the peace process, and the relationship between the United States and Israel. Typically offered Fall Spring Summer.

### **HIST 32100 - Europe In 19th Century**

**Prerequisite(s):** HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Analyzes major developments from the downfall of Napoleon to the out-break of World War I. Emphasis is placed on main currents in international relations, domestic affairs of major European States, the Revolution of 1848, and ideological, cultural, intellectual trends of the period. Typically offered Fall Spring Summer.

### **HIST 32500 - History Of Crime In America**

**Prerequisite(s):** HIST 15100 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 15200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A study of the history of crime in America from the 19th century to the present. Emphasis will be placed on violent crime, the public's response to it, and the cultural expressions of crime through literature and the popular media. Typically offered Fall Spring Summer.

### **HIST 33100 - Great Figures In History**

**Prerequisite(s):** HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 15200 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 15100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A series of autobiographical and biographical sketches of figures, distinguished as well as lesser-known, in all fields of activity. Typically offered Fall Spring.

### **HIST 33300 - Science And Society In Western Civilization I**

Credit Hours: 3.00. A survey of the main lines in the development of science and society in Western civilization from earliest times to Newton's discovery of gravitation. Beginning with prehistory and Egyptian and Mesopotamian civilizations, the course treats in more detail the Greeks and Romans. The course then considers science during the Middle Ages, examining the transmissions of ancient science and its incorporation into the body of Christian doctrines. The course concludes with the new efforts of physicians and astronomers to free their studies from the influence of the Church and antiquity, and the new accommodations between science and society during the Scientific Revolution. Typically offered Fall Spring.

### **HIST 33400 - Science And Society In Western Civilization II**

**Prerequisite(s):** HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 15200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course considers Western science and society from the time of Newton to the present. Beginning with Copernicus to Newton, topics next include biological classification, modern chemistry, and the onset of the industrial revolution. For the nineteenth century the course stresses the maturation of biology. Darwinian evolution, the dynamic synthesis and electromagnetic studies, and the second industrial revolution. In the twentieth century, the course covers modern physics, the life sciences, the understanding of the universe, and the interaction between pure and

applied science. The course concludes with some of the modern social and political problems which science caused by its success. Typically offered Fall Spring.

### **HIST 33501 - Religion, Magic And Witchcraft In Early Modern Europe**

Credit Hours: 3.00. A survey of popular culture and world views in Europe from about 1400 to 1800. An exploration of how common people understood their world, practiced their religion, and sought to exert control over the natural world. Typically offered Fall Spring.

### **HIST 33600 - History Of Organized Crime In America**

**Prerequisite(s):** HIST 15100 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 15200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An examination of the evolutionary process leading to the complex social phenomenon of organized crime. Emphasis will be placed upon the rise of gangs, the Mafia mystique, the immigrant and crime, and the cultural expressions of organized crime through literature and the popular media. Typically offered Fall Spring Summer.

### **HIST 33800 - Asia In The Modern Era**

**Prerequisite(s):** HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 11000 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 15100 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 15200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The history of Modern China, Japan, India, and Indo-China. In addition to politics and government, emphasis is placed on institutional and cultural developments, religion and philosophy, social structure, and art. The interaction of Western and Oriental civilizations is stressed. Typically offered Fall Spring Summer.

### **HIST 34001 - Pre-Modern China**

Credit Hours: 3.00. The course is an introduction to various aspects of Chinese civilization from its origin to 1900. While offering a comprehensive overview of the 4000 years of Chinese history, this course focuses on the changes and continuities of Chinese economy, culture, politics, and society. Typically offered Fall Spring Summer.

### **HIST 34002 - History Of Modern China**

Credit Hours: 3.00. This course is an introduction to various aspects of the Chinese civilization from 1900 to the present. While offering a comprehensive overview of the 110 years of Chinese history, this course focuses on the changes and continuities of Chinese economy, culture, politics, and society. Typically offered Fall Spring Summer.

### **HIST 34600 - The Era Of World Wars I And II, 1914-1945**

**Prerequisite(s):** HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 15200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Analyzes the causes, major campaigns, and legacy of the two major conflicts of the twentieth century. Examines the rise of totalitarian dictatorships, in particular Nazi Germany and the Soviet Union. Emphasis is placed on the geo-political context of both world wars, including the ideological challenges to the Western liberal democracies, the advent of the United States as the critical great power, and the role of democratic, imperial and dictatorial leadership in both conflicts. Typically offered Fall Spring Summer.

### **HIST 34700 - The Roaring Twenties**

**Prerequisite(s):** HIST 15200 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An assessment and analysis of the nature of political, social, religious, economic, cultural, intellectual, and diplomatic change and the response to that change in the United States of the 1920's. Typically offered Fall Spring Summer.

### **HIST 34800 - Depression Decade**

**Prerequisite(s):** HIST 15200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The Great Depression of the 1930's had a profound and often tragic impact on American life and society. This course will attempt to analyze that impact and its social, political, economic, cultural, diplomatic, and institutional consequences. Typically offered Fall Spring Summer.

### **HIST 34900 - Introduction To Jewish Studies**

**Prerequisite(s):** HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D- OR POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 11000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. (IDIS 33000 and POL 34900) An interdisciplinary seminar touching on many aspects of the Jewish experience, from biblical times to the present. The course introduces students to aspects of the rich and multi-faceted history, literature, theology, and culture of Jews and Judaism from antiquity to the present: from the ancient Near East to Europe, America and back to the modern Near East. The course begins with an examination of basic concepts of

Judaism, such as God, Torah, People, Land and Identity. It involves concepts from Jewish historical, theological, and literary roots from the formation of ancient Israel to contemporary Israel and Jewish-American Culture. Typically offered Fall Spring Summer.

### **HIST 35001 - Gettysburg: Three Days That Changed America**

Credit Hours: 3.00. An in depth study of one of the turning points of American history. Explores political, social and military aspects of the Gettysburg Campaign, the Gettysburg Address and the continuing role of Gettysburg in popular culture. Typically offered Fall Spring Summer.

### **HIST 35201 - Revolution And Revolutionaries In 20th And 21st Century Latin America**

Credit Hours: 3.00. A critical comparative analysis of twentieth and twenty-first century revolutionary theories and movements in Latin America. Typically offered Fall Spring Summer.

### **HIST 36110 - Environmental History Of Latin America**

Credit Hours: 3.00. This course is designed to introduce students to the history of Latin American ecological and biological environments. Environmental history of Latin America is closely intertwined with agricultural development, socio-economics, land tenure regulation and identity formation. As such, this course examines the fundamental role that changes in the land have had on migration patterns, legislation formation, activism, subsistence, state building and indigenous movements. Some of the vital historical intersections we will explore in this course are: disease epidemics and tropical environments, work conditions and export economies, eco-tourism and community activism. Typically offered Fall Spring Summer.

### **HIST 36300 - Europe Since 1945**

Credit Hours: 3.00. This course will cover the restoration of western Europe after World War II and the division of Europe into two mutually hostile camps, one communist, the other capitalist. The course will review the history of the Cold War and explore the political, social and economic factors that led to the end of the Soviet Empire. The course will, also, attempt to discuss the aftermath of the demise of the Soviet Union, ethnic violence, social disintegration, and economic decline. It will, also, look at the beginning of democratic institutions. Typically offered Fall Spring Summer.

### **HIST 36400 - England in the 20th Century**

**Prerequisite(s):** HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Emphasizing political and social history this course will investigate the British role in both world wars. The course will also explore how the British adapted to their changing circumstances. Readings and lectures will cover a variety of issues, including the role of British women, establishment of the welfare state and Britain's reluctance fully to embrace the European community. Typically offered Summer Fall Spring.

### **HIST 36500 - Women In America**

**Prerequisite(s):** HIST 15100 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 15200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A survey of the history of women in America from Colonial times to the present. Emphasis is on the changing status of women, social and cultural influences, movements for women's rights, and women's contributions to American society. Typically offered Summer Fall Spring.

### **HIST 36600 - Hispanic Heritage Of The United States**

Credit Hours: 3.00. Despite their numerical prominence, Hispanics have received relatively little attention in traditional U.S. history. Focusing primarily on Mexican-Americans, Cuban-Americans, and Puerto Ricans, this course offers a historical perspective on the Hispanic experience from colonial times to the present. Typically offered Fall Spring Summer.

### **HIST 36700 - 20th Century American History**

Credit Hours: 3.00. A survey of 20th century American history, covering major political and economic developments and related intellectual movements. A parallel consideration of foreign affairs traces the emergence of America as a world power and the effects of her new status on the Western Hemisphere, Europe, and Asia.. Typically offered Fall Spring Summer.

### **HIST 36800 - Episodes In American Religious History**

Credit Hours: 3.00. Introduces students to the study of religion in the United States by examining various religious groups and movements in their proper historical context. The course may focus on such groups as Puritans in colonial New England, Mormons in the nineteenth century, and twentieth-century popular revivalists. Typically offered Fall.

### **HIST 36900 - Research In History**

**Prerequisite(s):** HIST 29500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A research writing, and oral presentation course organized around semester-long topics or themes, selected by the instructor to reflect his/her area of knowledge and interest. A required course for History majors. Typically offered Fall Spring Summer.

### **HIST 37000 - The Holocaust**

**Prerequisite(s):** HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 15200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A survey of the Holocaust from 1933 to 1945. The course includes analysis and historical descriptions of such topics as the background and nature of Nazi racism, Nazi persecution from 1933 to 1941, the Final Solution from 1941 to 1945, the concentration camp experience, resistance, the apathy and indifference of bystanders, rescue efforts, assessment of the significance of the Holocaust, and historical interpretation of the Holocaust. Typically offered Fall Spring Summer.

### **HIST 37300 - The Caribbean**

Credit Hours: 3.00. Will explore various topics and issues unique to the Caribbean. Emphasis will be placed on European and African influence on the complex nature of Caribbean history, languages and literature, societies and cultures. Students may take the course for credit in either Latin American Studies or History, but not both. Typically offered Summer Fall Spring.

### **HIST 37400 - United States Economic History**

**Prerequisite(s):** HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 11000 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 15100 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 15200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. (ECON 37500) A study of the growth of the American economy from colonial times to the late 19th century. Emphasis is placed on the application of the tools of economic analysis to historical questions concerning the sources and rate of growth, the relationships between growth and structural and institutional change, and the impact of industrialization on the quality of life in the American economy. Not open to students with credit in ECON 37500. Typically offered Fall Spring Summer.

### **HIST 37600 - History Of Indiana**

Credit Hours: 3.00. Economic, political, and social history of Indiana from the state's earliest beginnings as a part of the old Northwest Territory to the present. Typically offered Fall Spring.

### **HIST 37800 - Early National America: 1787-1850**

Credit Hours: 3.00. An examination of major developments from the framing of the Constitution to the enactment of the Compromise of 1850. Political, constitutional, economic, diplomatic, and social aspects are studied in the context of continuing tensions between the forces of nationalism and sectionalism in the young republic. Typically offered Summer Fall Spring.

### **HIST 38000 - American Environmental History**

**Prerequisite(s):** HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 11000 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 15100 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 15200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This class will focus on how and why Americans living at particular times and places used and transformed their environment. Examining such familiar topics as colonization, the frontier, the industrial revolution, slavery, the Civil War, and the emergence of modern-day consumer culture, the class will show how the interaction of Americans with the natural world has influenced the development of a distinctive society. Typically offered Summer Fall Spring.

### **HIST 38100 - American Historical Biography**

**Prerequisite(s):** HIST 15100 FOR LEVEL UG WITH MIN. GRADE OF D OR HIST 15200 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Biographical studies of leaders in American life. Typically offered Fall Spring Summer.

### **HIST 38200 - American Constitutional History**

**Prerequisite(s):** HIST 15100 FOR LEVEL UG WITH MIN. GRADE OF D OR HIST 15200 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Survey of the fundamental principles of American constitutionalism and dominant trends in judicial interpretation, from the creation of the Constitution to the period of the New Deal. Typically offered Summer Fall Spring.

### **HIST 38600 - History Of American Foreign Relations**

Credit Hours: 3.00. The history of American foreign relations from the late colonial period to the present. The development of traditional policies, territorial expansion, and reaction to great-power status and the Cold War are some of the topics discussed. Typically offered Fall Spring.

### **HIST 38800 - The World Of Ideas I**

**Prerequisite(s):** HIST 11000 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 15100 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 15200 FOR LEVEL UG WITH MIN. GRADE OF D- OR POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The first half of a two-semester chronological sequence based on reading and discussing source materials and documents drawn from Political Science, Economics, History, Sociology, Psychology, and philosophy. This course is designed to familiarize students with the major ideas and ideals which have shaped world civilization. Not open to students with credit in POL 38800 or PHIL 38900. Typically offered Fall Spring Summer.

### **HIST 38900 - The World Of Ideas II**

**Prerequisite(s):** HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 15100 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 15200 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 11000 FOR LEVEL UG WITH MIN. GRADE OF D- OR POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The second half of a two-semester chronological sequence based on reading and discussing primary source materials and documents drawn from Political Science, Economics, History, Sociology, Psychology, and philosophy. This course is designed to familiarize students with the major ideas and ideals which have shaped world civilization. Major themes of this course are Liberty, Human Nature, and The Individual and Society. Not open to students with credit in POL 38800 or PHIL 38900. Typically offered Fall Spring Summer.

### **HIST 39000 - Topics In History**

**Prerequisite(s):** HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 11000 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 15100 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 15200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Topics vary. Typically offered Fall Spring Summer.

### **HIST 39300 - Historical Geography**

**Prerequisite(s):** HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 11000 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 15100 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 15200 FOR LEVEL UG WITH MIN. GRADE OF D- OR EAS 11000 FOR LEVEL UG WITH MIN. GRADE OF D- OR EAS 22000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This class addresses general topics in the discipline of geography. It seeks to educate students so that they can consider the spatial dimensions of historical, political, economic, and social themes and problems. In addition, the course seeks to develop the general skills of the discipline, especially those related to cartography. Students receiving credit for this as a Geography class may not also receive credit as a History class and vice versa. Typically offered Summer Fall Spring.

### **HIST 39700 - The Afro-American**

Credit Hours: 3.00. A survey of the history of the Afro-Americans in the United States from their African background to the present. Emphasis is placed upon the changing economic, social, and political status of Afro-Americans in the United States, and upon their contributions to American society. Typically offered Fall Spring Summer.

### **HIST 39800 - The Afro-American Since 1865**

Credit Hours: 3.00. The history of Afro-Americans from 1865 to the present. Their struggles to overcome social, economic, and political oppression and to win basic civil and human rights while making valuable contributions to American society are emphasized. Typically offered Fall Spring.

### **HIST 40100 - Indigenous Traditions Of Latin America**

Credit Hours: 3.00. The course will provide students with a deeper understanding of Latin America's native peoples through a historical perspective. This course will meet the Other Cultures/Global Awareness requirement in the BLS degree and be included as an elective in the proposed Latin America Studies Minor and Ethnic Studies Minor. Permission of department required. Typically offered Fall Spring Summer.

### **HIST 40300 - Europe In The Reformation**

Credit Hours: 3.00. A study of decay and renewal in European society, 1300 to 1650. Concentrates on the Protestant and Catholic Reformation and religious wars, but also covers the Northern Renaissance, the New Monarchies, and the discovery and exploration of the New World. Typically offered Fall Spring.

### **HIST 40400 - Kings And Philosophers: Europe 1618-1789**

Credit Hours: 3.00. Study of great European monarchies and transformation of modern thought by the scientific revolution and Enlightenment. Emphasis on key rulers (Louis XIV, Peter and Catherine the Great, Frederick the Great) and great thinkers (Voltaire, Montesquieu, Rousseau). Typically offered Fall Spring.

### **HIST 40500 - The French Revolution And Napoleon**

Credit Hours: 3.00. A study of revolutionary France from the fall of the ancien regime to the Congress of Vienna. Divided in emphasis between the period of the revolution and the era of Napoleon, the course stresses social, political, ideological, and institutional developments. Typically offered Fall Spring.

### **HIST 40600 - Rebels And Romantics: Europe 1815-1870**

Credit Hours: 3.00. Examines the dramatic social, cultural, and political developments in Europe following the defeat of Napoleon through various rebellious and romantic personalities, as well as figures who supported conservative or reformist solutions to the upheavals of industrialization, revolution, and nationalism. Typically offered Fall Spring.

### **HIST 41000 - Community Preservation Project**

Credit Hours: 3.00. Students will gain a broad understanding of the field of historic preservation. We will examine different types of historically significant resources, methods of documentation and interpretation, and the process of historic designation. This course requires 30 hours of field work. Typically offered Fall Spring Summer.

### **HIST 42400 - Latin American Societies**

**Prerequisite(s):** HIST 11000 FOR LEVEL UG WITH MIN. GRADE OF D OR HIST 15100 FOR LEVEL UG WITH MIN. GRADE OF D OR HIST 15200 FOR LEVEL UG WITH MIN. GRADE OF D OR HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D OR HIST 27100 FOR LEVEL UG WITH MIN. GRADE OF D OR HIST 27200 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. This course gives students an opportunity to learn the history of Latin American societies, speaking with Latin Americans from various segments of society, and integrating traditional studies with cultural immersion. The course may be offered at least once each year, each time addressing a different topic related to the history of Latin American societies, and including a trip to a different country in Latin America. Typically offered Fall Spring Summer.

### **HIST 42500 - Social And Ecological History Of The Andes**

Credit Hours: 3.00. This course examines topics relating to antiquity, geography, ecology, national histories, ethnic identities and politics of Andean republics. Typically offered Fall Spring Summer.

### **HIST 42600 - History Of United States-China Relations**

Credit Hours: 3.00. This course covers the history of US-Chinese relations since 1784. While mapping the changing American strategies from containment to engagement with China, the course focuses on political, economic, social, and cultural aspects between the two nations. The course also addresses US-Chinese diplomatic relations and the involvement of other major players, such as Russia, Japan, and Europe. Typically offered Fall Spring Summer.

### **HIST 46000 - American Colonial History**

Credit Hours: 3.00. An investigation of the foundation of the American colonies, their place in the British imperial structure, and the eventual conflict of imperial exigencies with colonial self-interest and national feeling. Typically offered Fall.

### **HIST 46100 - The Revolutionary Era, 1763 To 1800**

Credit Hours: 3.00. An analysis of the origins, nature, and consequences of the American Revolution; of the achievements and difficulties of the new nation under the Articles of Confederation; of the drafting and adoption of the Constitution; and of the initial political, economic, and social progress of the United States under the Federalists. Typically offered Fall Spring.

### **HIST 46400 - Jacksonian America 1815-1850**

Credit Hours: 3.00. Surveys Era of the Early American Republic. Topics include "Market Revolution" democratizations of American politics and society, Reform movements, territorial expansion, and Mexican-American War. Typically offered Summer Fall Spring.

### **HIST 46601 - Immigration And Ethnicity In U S History**

Credit Hours: 3.00. Investigates the nature of immigration to the United States, the reaction of immigrants and those already in America to the succeeding waves of immigration, the changing nature of immigration and naturalization legislation, the development of ethnic communities and their strategies for interaction with one another and the larger society, and the influence of immigration and ethnicity on American history. Typically offered Fall Spring Summer.

### **HIST 46700 - The Emergence Of Modern America**

Credit Hours: 3.00. Examines the changes in American society between 1877 and 1932. The course covers such issues as the rise of industry, the growth of consumerism, the shift to a multi-ethnic society, imperialism, Populism, Progressivism, World War I, and the 1920s. Typically offered Fall Spring.

### **HIST 46800 - Recent American History**

Credit Hours: 3.00. Examines the issues that shaped American society, politics, foreign policy, and culture from 1932 to the present. Covers the Great Depression, World War II, the Cold War, and the Vietnam War as well as the social, cultural, and economic impact of those events. Typically offered Fall Spring.

### **HIST 47200 - History Of Mexico**

Credit Hours: 3.00. A history of the Mexican people from the pre-Columbian period to present. Special emphasis is placed on the successful social revolutions that led to the development of today's dynamic nation. Typically offered Fall Spring.

### **HIST 49000 - Topics In History**

**Prerequisite(s):** HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 11000 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 15100 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 15200 FOR LEVEL



UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Topics vary. Typically offered Fall Spring Summer.

### **HIST 49200 - Seminar In Historical Topics**

Credit Hours: 3.00. Course description will vary according to specific topic proposed to study. Typically offered Fall Spring Summer.

### **HIST 49300 - Interdisciplinary Undergraduate Seminar**

**Prerequisite(s):** HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D OR HIST 11000 FOR LEVEL UG WITH MIN. GRADE OF D OR HIST 15100 FOR LEVEL UG WITH MIN. GRADE OF D OR HIST 15200 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 1.00 to 3.00. An undergraduate seminar devoted to an interdisciplinary examination of social, economic, political, and intellectual movements, using the faculty resources of the participating departments. Subject matter will vary. Each offering of the seminar will be approved by a committee of department heads from the sponsoring departments. Typically offered Fall Spring Summer.

### **HIST 49400 - Science And Society In American Civilization**

**Prerequisite(s):** HIST 15100 FOR LEVEL UG WITH MIN. GRADE OF D OR HIST 15200 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. This course examines the development of science in the United States from colonial times to the present. Emphasis in the earlier periods is placed on comparison and contrast of the American scene with that of Europe. Subsequent treatment deals with industrialization, and maturation of the American scientific community, and the increasing social effects of science. Among those considered are the forces making for urbanization, for greater interdependence among science, industry and government, and for repercussions in intellectual affairs. Typically offered Fall Spring.

### **HIST 49500 - Research Seminar In Historical Topics**

**Prerequisite(s):** HIST 29501 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is designed to train history majors in the fundamentals of historical research and writing. Course descriptions vary according to specific topics proposed for study by instructors. Typically offered Fall Spring.

### **HIST 49800 - Individual Studies In History**

**Prerequisite(s):** HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D OR HIST 11000 FOR LEVEL UG WITH MIN. GRADE OF D OR HIST 15100 FOR LEVEL UG WITH MIN. GRADE OF D OR HIST 15200 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Topics vary. Typically offered Fall Spring Summer.

### **HIST 50900 - Reading Seminar In Colonial America: Seventeenth And Eighteenth Century American**

Credit Hours: 3.00. An investigation of the founding of the American colonies, their political, economic, and religious histories, and the emergence of antagonism towards the British Empire in the decades prior to the Revolution. Permission of instructor required. Typically offered Fall Spring Summer.

### **HIST 51200 - England Under The Stuarts**

Credit Hours: 3.00. This intensive study of seventeenth-century England focuses on the political, religious, and economic tensions under the early Stuarts; the Civil War; Cromwell's Protectorate; and The Glorious Revolution. Topics discussed include parliament, puritanism, radicalism, the Restoration, and the Whig Oligarchy. Typically offered Spring.

### **HIST 51400 - A History Of Western Thought I**

Credit Hours: 3.00. Intellectual and cultural development of the western world to the end of the Middle Ages. Typically offered Fall.

### **HIST 51500 - A History Of Western Thought II**

Credit Hours: 3.00. Intellectual and cultural development of the western world from the Renaissance to the present. Typically offered Spring.

### **HIST 52500 - Hitler And Twentieth-Century Germany**

**Prerequisite(s):** HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF B- OR HIST 11000 FOR LEVEL UG WITH MIN. GRADE OF B- OR HIST 15100 FOR LEVEL UG WITH MIN. GRADE OF B- OR HIST 15200 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. A reading and discussion course concentrating on four major periods of German history: pre-1914,

the Weimar Republic, the Third Reich, and the post-1945 period. Emphasis is placed on the transformations occurring in German society as a result of these upheavals. Typically offered Spring.

### **HIST 55300 - Colonial America, 1600-1776**

Credit Hours: 3.00. A study of the expansion of Europe, the age of exploration and discovery, and the establishment of colonies in the New World. Particular attention will be paid to the emergence of an American culture during the seventeenth and eighteenth centuries, the nature of the British Empire, and the emergence of dissent and revolution. This course is the first part of a five-part upper-level overview of American history. Typically offered Spring Fall Summer.

### **HIST 55500 - The Emergence Of Modern America, 1865-1916**

Credit Hours: 3.00. An examination of the nation that emerged emotionally exhausted from a civil war to become, by the eve of World War I, a land seemingly destined to achieve a degree of perfection not previously attained by the human community. The interaction of a flourishing industrial establishment, floods of immigrants, rapid urbanization, and smoldering racism combined to transform antebellum America into a complex and relatively sophisticated society during those years. Emphasis will be placed upon an analysis of these forces and the men who tried to control them. Typically offered Spring Fall Summer.

### **HIST 57300 - The Long Nineteenth Century**

Credit Hours: 3.00. Historians of the U.S. have sometimes referred to the long nineteenth century because so many of the important lines of historical development industrialization, immigration, labor organization, expansionism, reform overlapped the end of the nineteenth into the beginning of the twentieth centuries. This course focuses on the historiographic models developed to explain these key themes and the interpretation of selected documents pertinent to each. Typically offered Fall Spring Summer.

### **HIST 57500 - The American Frontier**

Credit Hours: 3.00. This course will involve study of the nature and importance of the westward movement in American history from the Revolution to the twentieth century. The westward movement will be treated in its varied aspects. Emphasis will be placed upon social and economic aspects as well as upon the spread of government. Efforts will be made to view this national expansion from the viewpoint of Americans exploiting a great land, offering vast resources, and the effects these resources had upon American development. Although the Turner thesis will be discussed, no attempt will be made to pursue a thesis. Typically offered Spring Fall Summer.

### **HIST 57600 - Problems In Latin American History**

Credit Hours: 3.00. A detailed examination of specific topics in Latin American history. Topics offered vary between colonial and national periods. Typically offered Spring Fall.

### **HIST 57700 - Contemporary Latin America**

Credit Hours: 3.00. A topical and regional approach to recent political, social, and economic movements in Latin America. Typically offered Spring Fall.

### **HIST 58400 - Social History Of The United States**

Credit Hours: 3.00. Social and cultural development of the American people since the late eighteenth century. Typically offered Spring Fall.

### **HIST 58500 - American Labor History**

Credit Hours: 3.00. A chronological survey of American working class society, the growth of worker organizations and the movement toward massive labor organization as a distinctive national development. Changing philosophies are examined, and the resulting pattern of relationships between management, the federal government, and the labor movement is emphasized. Typically offered Spring Fall.

### **HIST 58600 - United States Foreign Affairs To World War I**

Credit Hours: 3.00. An examination of the economic, political, and ideological factors which shaped American foreign policy from the colonial era until WWI. Course emphasizes the drive for territorial and commercial expansion which propelled the United States to a position of world power. Typically offered Fall.

### **HIST 58700 - United States Foreign Affairs: World War I To Present**

Credit Hours: 3.00. An examination of the economic, political, and ideological factors which shaped American foreign policy from WWI until present. Course emphasizes the intimate relation between domestic conditions and the growing involvement of the United States in world affairs. Typically offered Spring.

### **HIST 58900 - History Of Religion In America**

Credit Hours: 3.00. A historical examination, from colonial beginnings to the present, of American religions and their role in the social, political, and economic life of the nation, including a survey of the speculative theories, the institutional forms, and the artistic and emotional expressions of religion which have developed in the United States. Typically offered Spring Fall.

### **HIST 59000 - Directed Reading In History**

Credit Hours: 1.00 to 3.00. A reading course directed by the instructor in whose field of specialization the content of the reading falls. Approval of each reading project must be secured from the department. Permission of instructor required. Typically offered Spring Fall.

**HIST 59200 - Early American Intellectual History**

Credit Hours: 3.00. A survey of American political, economic, philosophical, and religious thought beginning with the European backgrounds of American puritanism and concluding with the rise of Darwinian naturalism. Typically offered Fall.

**HIST 59300 - Twentieth-Century American Intellectual History**

Credit Hours: 3.00. Origins and developments of modern American thought. Early American religious and philosophical traditions; Darwinian evolution and evolutionary naturalism; pragmatism, and the main currents of the 1920s and 1930s. Typically offered Spring.

**HIST 59600 - The American City**

Credit Hours: 3.00. A survey of urban development in the United States from the early colonial towns to the twentieth-century megalopolis. Emphasis is placed on the city as a particular geographic, economic, political, social, and cultural entity, and on its expanding role in American life. Typically offered Fall.

**HIST 60100 - Reading Seminar In European History**

Credit Hours: 1.00 to 3.00. Bibliography and historiography of selected fields of topics in European history; may vary in subject matter from semester to semester. Prerequisite: Master's student standing. Typically offered Fall Spring.

**HIST 65100 - Reading Seminar In American History**

Credit Hours: 1.00 to 3.00. Bibliography and historiography of selected fields or topics in American history; may vary in subject matter from semester to semester. Prerequisite: Master's student standing. Typically offered Fall Spring.

**HIST 69800 - Research MA Thesis**

Credit Hours: 1.00 to 18.00. Research MA Thesis. Permission of instructor required. Typically offered Spring Fall Summer.

**Honors****HONR 10000 - Freshman Honors Seminar**

Credit Hours: 3.00. A freshman experience course directed to honors students. This course provides an orientation to the honors program, the university environment and an introduction to research methods, covering library research, experimental design, survey design, statistical analysis, critical thinking, logic and ethics. Students will critically examine research topics by evaluating evidence and the conclusions that may be drawn. Typically offered Summer Fall Spring.

**HONR 11100 - Honors Cohort I**

Credit Hours: 3.00. The course introduces students to the Honors College, to university-level thinking and inquiry, and to undergraduate research. Students will complete a career and future planning project. This writing-intensive course also meets the objectives of the first semester of the English composition requirement. Typically offered Fall.

**HONR 11200 - Honors Cohort II**

**Prerequisite(s):** HONR 11100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Required course for second-semester freshmen in the Honors College. Continuation of academic and career planning and undergraduate research. Additional topics include leadership, critical thinking and the study of communication theories as applied to speech. Typically offered Spring.

**HONR 21100 - Honors Cohort III**

**Prerequisite(s):** HONR 11200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Required for first-semester sophomores in the Honors College. Continuation of academic and career planning, undergraduate research, leadership, and critical thinking. Also covers directed writing with emphasis on the logical and rhetorical problems involved in writing discursive essays. Typically offered Fall Spring.

**HONR 21200 - Upperclass Intro to Honors**

Credit Hours: 1.00. Required for students who are admitted to the Honors College after their freshman year. Topics include undergraduate research and academic and career planning, as well as Honors College requirements. Typically offered Fall Spring.

**HONR 29000 - Special Topics**

Credit Hours: 1.00 to 4.00. Restricted to honors program students, this course will involve an investigation of a specific problem or topic. Typically offered Summer Fall Spring.

**HONR 39000 - Junior Level Topics**

Credit Hours: 1.00 to 4.00. Restricted to honors program students, this course will involve an investigation of a specific problem or topic. Typically offered Summer Fall Spring.

**HONR 39100 - Honors Humanities Topics**

Credit Hours: 3.00. May be taken in lieu of HONR 39000. Investigation of a particular problem or question in the social sciences. Typically offered Fall Spring.

**HONR 39200 - Honors Social Science Topics**

Credit Hours: 3.00. May be taken in lieu of HONR 39000. Investigation of a particular problem or question in the social sciences. Typically offered Fall Spring.

### **HONR 40000 - Honors Capstone Project**

Credit Hours: 1.00 to 3.00. Restricted to honors program students, this is an upper level honors course mandating a major supervised research effort or practicum resulting in a written report and public, oral dissemination. Typically offered Summer Fall Spring.

### **HONR 41000 - Honors Leadership**

Credit Hours: 1.00. Required for students who are leaders in the Honors College student governance structure. Covers theories of leadership and entails planning for the Honors College for the upcoming academic year. Offered summer only.

### **HONR 41100 - Honors Leadership II**

Credit Hours: 1.00. Required for students who are leaders in the Honors College student governance structure. Emphasis on recruiting committee member, developing a shared vision, formulating objectives, and identifying strategies. Offered Fall only.

### **HONR 41200 - Honors Leadership III**

Credit Hours: 1.00. Required for students who are leaders in the Honors College student governance structure. Emphasis on conflict resolution, assessment, and professional development of committee members. Offered Spring semester only.

### **HONR 42000 - Honors Teaching**

Credit Hours: 3.00. An experience as a teaching assistant in one of the freshman Honors Cohort classes. Taught by the instructor of the Honors Cohort class in which they will assist, this course will provide students with basic pedagogical theory and strategy before allowing students to develop lesson plans and make short teaching presentations in small sections.

### **HONR 42100 - Advanced Honors Teaching**

**Prerequisite(s):** HONR 42000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A more engaged teaching experience in which a student, under the guidance of an Honors College faculty member or administrator, is more actively involved in delivering the content to students in HONR 20200.

### **HONR 43000 - Honors Mentoring**

Credit Hours: 3.00. After receiving training from the counseling center, office of the dean of students, and to her appropriate university resources, students are assigned 4-6 incoming freshmen with whom they meet weekly and communicate regularly. Students provide guidance to freshmen about university opportunities, success strategies, and other endeavors with an eye toward retention and engagement.

### **HONR 45000 - Honors Thesis**

Credit Hours: 3.00. Required for students in the Honors College who are not "stacking" the these (i.e., doing the thesis in conjunction with an existing senior project, senior seminar, etc.). Intensive research of a problem or question in the student's major, resulting in a formal paper or project of significant depth.

### **HONR 49000 - Senior Level Topics**

Credit Hours: 1.00 to 4.00. Restricted to honors program students, this course will involve an investigation or a specific problem or topic. Typically offered Summer Fall Spring.

## **Hospitality and Tourism Management**

### **HTM 10000 - Introduction To The Hospitality And Tourism Industry**

Credit Hours: 2.00 (West Lafayette) 1.00 to 3.00 (Calumet, Fort Wayne) An overview of the supervisory careers, opportunities, and responsibilities in the foodservice, lodging, and tourism industry; including historical developments, pioneers, and industry leaders; representatives of companies from the three areas. Typically offered Fall.

### **HTM 10100 - Hospitality And Tourism Student Seminar**

Credit Hours: 1.00. Course assists the student new to Purdue to become acquainted with the Purdue system and with the HTM department and program. Information presented to assist students with developing strategies for academic and career-related success at Purdue. Typically offered Fall.

### **HTM 14100 - Financial Accounting For The Service Industries**

Credit Hours: 3.00. Fundamental accounting principles and procedures applied to the hospitality and service industries. Includes study of the uniform system of accounts, financial statements, special purpose journals, and subsidiary ledgers unique to the hospitality and service industries. Typically offered Summer Fall Spring.

### **HTM 18100 - Lodging Management**

Credit Hours: 3.00. Organization, management and operating procedures of lodging facilities. Guest-employee interactions will be analyzed along with current trends and cutting edge topics in the lodging industry. A history of the lodging industry will be discussed. Typically offered Fall Spring.

### **HTM 19100 - Sanitation And Health In Foodservice, Lodging, And Tourism**

Credit Hours: 3.00. This course introduces students to the foodservice component of the Hospitality and Tourism industry and explores food safety and other health related issues. Application of sanitation principles in restaurants, hospitals, schools, hotels, cruise ships, airlines, and international travel are covered. Students must pass a National Sanitation Certification Examination to receive credit. Typically offered Fall Spring.

### **HTM 21200 - Organization And Management In The Hospitality And Tourism Industry**

Credit Hours: 3.00. Basic principles of planning, organizing, directing, and controlling human and physical resources will be addressed. Students will also learn how these principles can be applied to maximize the organizational effectiveness of hospitality and tourism businesses. Typically offered Fall Spring.

### **HTM 23100 - Hospitality And Tourism Marketing**

Credit Hours: 3.00. This course teaches students a customer-oriented approach to marketing in hospitality and tourism. The role of marketing in an organization's overall strategic plan is emphasized. Techniques available to hotels, restaurants, and other tourism businesses are described and evaluated, including packaging, the travel trade, advertising, sales promotion, positioning and branding. Typically offered Fall Spring.

### **HTM 24100 - Managerial Accounting And Financial Management In Hospitality Operations**

**Prerequisite(s):** MGMT 20000 FOR LEVEL UG WITH MIN. GRADE OF C OR HTM 14100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Managerial and financial analyses of numerical data used for decision-making. Consideration of systems, techniques, information types, and presentational forms used by hospitality management. Emphasis on situations oriented to the hospitality industry. Typically offered Summer Fall Spring.

### **HTM 25100 - Computers In The Hospitality Industry**

**Prerequisite(s):** CIS 20400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Explore the applications of computers in the hospitality industry. Special emphasis is placed on those impacting the management of the organization. Typically offered Fall Spring Summer.

### **HTM 29100 - Quantity Food Production And Service**

**Prerequisite(s):** FN 20300 FOR LEVEL UG WITH MIN. GRADE OF C OR FN 20500 FOR LEVEL UG WITH MIN. GRADE OF C AND HTM 19100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00 (West Lafayette, Fort Wayne) 4.00 (Calumet) An introduction to food preparation methods and service techniques in quantity food settings. Students become familiar with ingredients and culinary terminology, and learn to read and evaluate menus. Recipe conversion and costing skills are developed. Different production schemes and product flow are examined, and the relationship between back-of-the-house and front-of-the-house activities is discussed. Typically offered Fall Spring.

### **HTM 30100 - Hospitality And Tourism Industry Practice**

Credit Hours: 1.00. Training and practical experience at the entry-level, totaling at least 300 hours, in an approved hospitality or tourism operation. Typically offered Fall Spring Summer.

### **HTM 30200 - Hospitality And Tourism Industry Internship**

**Prerequisite(s):** HTM 30100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 1.00 to 2.00. This course is a supervised and structured industry internship experience. Students are required to obtain a signed internship learning agreement with an employer prior to starting the internship. The internship consists of rotations through at least 3 functional areas. Students are also required to prepare comprehensive written management reports reflecting upon their internship experience and present employer evaluation. Variable credits with a minimum of 320 work hours needed for each credit hour or 640 for two credit hours. Typically offered Summer.

### **HTM 30900 - Hospitality And Tourism Management Publicity And Promotion**

Credit Hours: 3.00. Written and oral skills activities focusing on the promotion of the academic major. Newsletter writing and production, public speaking events, preparation and design of academic recruitment materials and other portfolio building public relations types of activities required. Good independent study habits and research skills are developed. Typically offered Fall Spring Summer.

### **HTM 31100 - Procurement Management For Foodservice**

Credit Hours: 3.00. Identifies and describes food, supplies, and related merchandise used in the foodservice industry. Provides methods and criteria for recognizing quality, evaluating, specifying, purchasing, and inspecting these products. Discusses the use of technology in the purchasing component of the foodservice industry. Typically offered Fall Spring.

### **HTM 31200 - Human Resources Management For The Service Industries**

Credit Hours: 3.00. The principles and practices of managing human resources for effective operations of hospitality and tourism businesses will be covered including: analysis and design of work, recruiting, selection, training and development, performance management, compensation, employee relations, and strategies for supporting organizational strategies. Typically offered Fall Spring.

### **HTM 31400 - Franchising**

Credit Hours: 3.00. The study of franchise administration, operations, and marketing, with a special emphasis on hospitality-related franchises. Includes a study of the legal regulation of franchises, the franchisee-franchisor relationship, and unique problems in operating a franchise. Typically offered Summer.

### **HTM 31500 - Club Management And Operations**

Credit Hours: 3.00. A study of the organization, administration, operation, and opportunities within the private club industry, with emphasis on the manager's duties. Typically offered Spring.

### **HTM 31600 - Casino Management**

Credit Hours: 3.00. An overview of the development, operations and management of casino enterprises. Includes the evolution of gaming, regulatory statutes and agencies, operational concerns, marketing strategies, financial controls, security/surveillance requirements, ethical considerations, and the economic/social impact on the community. Field trip required. Typically offered Fall Spring Summer.

### **HTM 32100 - Equipment For Restaurants, Hotels, And Institutions**

**Prerequisite(s):** HTM 29100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Principles of selection, operation, and maintenance of food service equipment, including materials, structural details, design, cost performance, and specification standards. Typically offered Fall Spring Summer.

### **HTM 32200 - Hospitality Facilities Management**

Credit Hours: 3.00. Technical and managerial issues relating to the operation and maintenance of the physical plant and equipment in hospitality industry facilities. Typically offered Fall Spring.

### **HTM 32300 - Food Service Layout And Design**

**Prerequisite(s):** HTM 29100 FOR LEVEL UG WITH MIN. GRADE OF C AND HTM 32200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Arrangement of Food Service equipment for efficient use of space. An introduction to computer aided design for equipment placement in thin space constraints. Development of workflow patterns and human engineering considerations. Typically offered Fall Spring Summer.

### **HTM 33100 - Hospitality And Tourism Sales And Service**

Credit Hours: 3.00. Application of sales and customer service methods used to generate revenues for hospitality and tourism businesses. Emphasis is placed on a hands-on assignment which requires students to identify a product that they will market and sell, as well as participate in a sales blitz. Typically offered Fall Spring.

### **HTM 34100 - Cost Controls In Foodservice And Lodging**

**Prerequisite(s):** MGMT 20000 FOR LEVEL UG WITH MIN. GRADE OF C OR HTM 14100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Application of cost controls; development of cost-reduction methods through management policy and decisions; examination of cost-control techniques for food, labor, and supplies in addition to the emphasis on beverage management control. Typically offered Fall Spring.

### **HTM 35200 - International Cuisine**

Credit Hours: 3.00. Research in and hands-on food preparation of various international cuisines with corresponding study of their cultures and languages. Typically offered Spring.

### **HTM 36000 - Introduction To Baking Management**

Credit Hours: 3.00. This lecture/lab course combines hands-on baking techniques with the management skills necessary to work towards operating a bakery business. Pastry arts recipe development and group interdependence principles are fostered. Typically offered Fall Spring Summer.

### **HTM 36100 - Managed Services For The Foodservice Industry**

Credit Hours: 3.00. Focuses on the unique aspects of contract and institutional foodservice management as it compares to commercial foodservices; including operations in airline, business dining, school and campus, healthcare, conference and convention center, vending, correctional, and leisure foodservices. Typically offered Fall Spring Summer.

### **HTM 37100 - Introduction To Tourism**

Credit Hours: 3.00. Principles, practices, and philosophies which affect the economic, social, cultural, psychological, and marketing aspects of human travel and the tourism industry. Typically offered Summer Fall Spring.

### **HTM 37200 - Global Tourism Geography**

Credit Hours: 3.00. Introduction and analysis of specific world travel destinations, including the exploration of geographic features, customs and tradition, population centers, visitor attractions, political, religious, language and

other cultural differences as these relate to the hospitality and travel industry. The course is designed to teach students specific geographic knowledge, and develop a deeper understanding and empathy for cultural values and traditions that exist outside their own culture. Typically offered Fall.

### **HTM 37500 - Sport-Related Tourism And Leisure Management**

Credit Hours: 3.00. (FM 37500) Integration of Sport and Tourism disciplines. Sport participation and spectator travel, hard and soft adventure tourism, and management of leisure time are emphasized. Focus on the dynamics behind the explosion in Sport and Adventure Tourism. Not open to students with credit in FM 37500. Typically offered Summer Fall Spring.

### **HTM 37901 - Ecotourism, Sustainable Tourism Development And Conservation**

Credit Hours: 3.00. The history of ecotourism in the hospitality industry, the pros and cons of the impact of sustainable development on people, the hospitality industry, ecology and communities, and a review of recent initiatives in conservation of resources. Typically offered Fall Spring Summer.

### **HTM 38100 - Executive Housekeeping Management**

Credit Hours: 3.00. Management principles and practices relative to the internal maintenance of public lodging facilities. Experience in room preparation, cleanliness, tools, record keeping and departmental organization. Typically offered Fall Spring Summer.

### **HTM 38300 - Resort, Cruise, And Entertainment Operations**

Credit Hours: 3.00. This class provides a comprehensive analysis of the operations of different styles of resorts, as well as cruise lines, gaming, and other entertainment attractions. Operating structures, systems, and management practices are compared with traditional hotels. The resort development process is explained and alternative resort concepts are discussed, including resort condominium and vacation/interval ownership. Typically offered Fall Spring Summer.

### **HTM 38500 - Educational Study Cruise And/Or Air-Land Tour**

Credit Hours: 3.00. Exploration of the Cruise Line and/or Air-Land Industry with a focus on hospitality, tourism and culinary arts management, as well as the Cruise and/or Air-Land Tour industry history and marketing operations. Includes experiential learning multi-day Cruise and/or Air-Land Tour practicum component with land and/or sea lectures, tours, and exposure to many languages/cultures. Prerequisites: 21 years of age and valid passport. Typically offered Fall Spring Summer.

### **HTM 39000 - Undergraduate Special Problems**

Credit Hours: 0.00 to 6.00. Individual or group participation in supervised reading, laboratory experiences, field experiences, or research in special areas of the field. Permission of instructor required. Typically offered Fall Spring Summer.

### **HTM 39100 - Specialty Food Service And Catering**

**Prerequisite(s):** HTM 29100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Exploration and creative use of specialty foods and unusual cuisine for the hospitality field. Concepts of management for the effective operation of quantity specialty food service organizations within a financial framework involving menu-planning, customer-relations, and production service logistics. Typically offered Fall Spring Summer.

### **HTM 39200 - Classical Cuisine**

**Prerequisite(s):** HTM 29100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 1.00. Supervised hands-on cooking experience to enhance competencies needed in professional cooking. Permission of instructor required. Typically offered Spring.

### **HTM 39300 - Advanced Foodservice Techniques**

**Prerequisite(s):** HTM 29100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 1.00. The purpose of this course is to develop students' understanding of dining room management, give exposure to various service styles, and to extend their knowledge of gastronomy. Students will become familiar with the lines of authority found in various food service settings, and required to master the specifics of different service styles and service etiquette. Course is available as an elective for all students enrolled in Hospitality and Tourism Management. Typically offered Fall.

### **HTM 41100 - Hospitality And Tourism Law**

Credit Hours: 3.00. Overview of the fundamental legal framework that governs the conduct of hospitality and tourism managers. Topics include civil rights, contracts, court procedures, ethics, and risk management. Typically offered Fall Spring.

### **HTM 41900 - Senior Seminar In Hospitality And Tourism Management**

Credit Hours: 3.00. The exploration, discussion and presentation of current research concerned with or related to the hospitality and tourism management industry. Typically offered Fall Spring Summer.

### **HTM 42000 - Event Management**

Credit Hours: 3.00. This course will review the field of event management, convention and association management. Emphasis will be put on the logistical requirements and economics impact of this area of business as well as on the required skill set needed in the various employment opportunities existing in this field. The course will include a practical application that will involve students in the planning, organizing and execution of an event. Typically offered Fall Spring.

### **HTM 44200 - Fraud Examination For Hospitality Managers**

**Prerequisite(s):** HTM 24100 FOR LEVEL UG WITH MIN. GRADE OF C OR MGMT 20100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Fraud Examination will cover the principles and methodology of fraud detection and deterrence. The course includes such topics as skimming, cash larceny, check tampering, register disbursement schemes, billing schemes, payroll and expense reimbursement schemes, non-cash misappropriations, corruption, accounting principles and fraud, fraudulent financial statements, and interviewing witnesses. The impact of the Sarbanes-Oxley Act 2002 on the Hospitality industry and issues of compliance will be addressed. Typically offered Fall Spring Summer.

### **HTM 49100 - Beverage Management**

Credit Hours: 2.00. Principles and practices regarding the production, selection, purchasing, storage, and service of beverage alcohol in the hospitality industry. State of Indiana responsible alcohol service certification is required to earn course credit. Must be 21 years or older. Permission of department required. Typically offered Fall Spring.

### **HTM 49101 - Sales And Service For Beverage Operations**

Credit Hours: 3.00. Principles and practices regarding the production, selection, purchasing, storage, marketing and service of alcoholic and non-alcoholic beverages in the hospitality industry. Includes lab component for hands-on experience. Students must acquire responsible alcohol service certification to earn course credit. Must be 21 years of age. Typically offered Fall Spring Summer.

### **HTM 49110 - Wine Sommelier Certification**

**Prerequisite(s):** HTM 49101 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 1.00. This course involves the application of previously learned information about the principles of wine including vine growing, wine production, sensory evaluation of wine and practices involved in selection and sales of wine in a foodservice establishment. Students are immersed in the analysis and application of the principles and practices of the Guild of the Master Sommelier Program including Level one Certification. Student must be at least 21 years of age. Typically offered Fall.

### **HTM 49200 - Advanced Foodservice Management**

**Prerequisite(s):** HTM 21200 FOR LEVEL UG WITH MIN. GRADE OF C AND HTM 29100 FOR LEVEL UG WITH MIN. GRADE OF C AND HTM 31100 FOR LEVEL UG WITH MIN. GRADE OF C AND HTM 34100 FOR LEVEL UG WITH MIN. GRADE OF C AND HTM 49101 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 4.00. Utilize managerial skills and techniques with planning, organizing, directing and controlling a full service restaurant operation. Management teams of two to three students develop, market, and operate a restaurant that is open to the public. Emphasis is placed on utilizing effective management skills to create a high quality, profitable operation with well planned systems and highly motivated, organized employees. Typically offered Fall Spring.

### **HTM 49900 - Feasibility Studies And Business Development In Hospitality And Tourism**

**Prerequisite(s):** HTM 21200 FOR LEVEL UG WITH MIN. GRADE OF C AND HTM 23100 FOR LEVEL UG WITH MIN. GRADE OF C AND HTM 24100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. The study of business development. The course will cover all stages in the feasibility and development process. Emphasis will be on strategic planning, design of systems, models and problem analysis, leading to the opening of a successful hospitality or tourism business. Typically offered Fall Spring.

## **Horticulture**

### **HORT 10200 - Fundamentals Of Horticulture**

Credit Hours: 3.00. Study of the biology and technology involved in the production, storage, processing and marketing of ornamentals, fruits, vegetables, and other horticultural plants. Typically offered Fall Spring Summer.

## **Human Development and Family Studies**

### **HDFS 10100 - Working With Parents**

Credit Hours: 3.00. An indepth look at working with parents and families in Early Childhood programs. Typically offered Fall Spring Summer.

### **HDFS 12500 - Children In Family Care**

Credit Hours: 3.00. An introduction to issues concerning the care of young children, the course will focus on practices appropriate for a wide range of children in family settings. Typically offered Fall Spring Summer.



### **HDFS 20200 - Infant And Toddler Supervised Experience**

**Prerequisite(s):** BHS 22800 FOR LEVEL UG WITH MIN. GRADE OF D AND (CDFS 21000 FOR LEVEL UG WITH MIN. GRADE OF D OR HDFS 21000 FOR LEVEL UG WITH MIN. GRADE OF D)

Credit Hours: 3.00. Experiential learning in infant and toddler classrooms. Typically offered Fall Spring.

### **HDFS 20300 - Advanced Infant/Toddler Curriculum**

**Prerequisite(s):** BHS 22800 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An advanced look at infant-toddler development and theories while focusing on setting up an appropriate curriculum for the classroom. Typically offered Fall Spring Summer.

### **HDFS 20500 - Introduction To Family Dynamics**

**Prerequisite(s):** HDFS 10100 FOR LEVEL UG WITH MIN. GRADE OF C- AND HDFS 21000 FOR LEVEL UG WITH MIN. GRADE OF C- AND (ENGL 10500 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10200 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 3.00. An examination of the interpersonal processes that take place within family contexts. Emphasis is on family dynamics with an extended focus on family interaction, family relationships, intimacy, conflict management and stages of family development. Also considered are linkages between family processes and the modern social environment and basic components of the research process. Typically offered Fall Spring Summer.

### **HDFS 21000 - Introduction To Human Development**

Credit Hours: 3.00. This course provides an introduction to the development of individuals from the prenatal period to adulthood and old age. Theories and research findings related to physical growth, cognitive and language development and social and emotional development will be discussed. Typically offered Fall Spring Summer. CTL: Developmental Psychology.

### **HDFS 21600 - Introduction To Early Childhood Education**

Credit Hours: 3.00. A survey of early education programs, including center based, infant/toddler, family child care, and kindergarten. Course will include consideration of the history & theory of early childhood programs; program routines and organization for the healthy intellectual, social & physical growth of young children; professional relationships with parents and staff. Typically offered Fall Spring Summer.

### **HDFS 21700 - Issues In Early Childhood Education**

**Prerequisite(s):** HDFS 21600 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Issues in Early Childhood Education course largely focuses on 1) multicultural diversity, 2) young children's behavioral issues and guidance, and 3) interpersonal relationships. In this course, students will gain a thorough understanding of diversity in society and importance of multicultural education as well as learn how to provide anti-bias curriculum and environment for young children. This course will help students identify young children's behavioral issues and aggressions and learn diverse guidance skills to promote young children's positive development. Students will also learn the development and maintenance of interpersonal relationships. Typically offered Fall Spring Summer.

### **HDFS 22800 - Developmental Infant And Toddler Care**

Credit Hours: 3.00. Developmental Infant and Toddler Care Discussion of frameworks, principles and techniques for infant toddler programs; focusing on the role of healthy environments and nurturing relationships with adults. Typically offered Fall Spring Summer.

### **HDFS 23500 - CDA Portfolio And Experience**

Credit Hours: 3.00. CDA Portfolio and Experience students must be regularly involved in an early care and education program. Students will prepare autobiographical and goal statements, assemble resources and participate in discussion of issues in early care and education programs specifically geared to supporting the CDA program. Typically offered Summer Fall Spring.

### **HDFS 29001 - Basic Topics In Human Development And Family Studies**

Credit Hours: 0.00 to 6.00. Individual or group participation in supervised reading, laboratory experiences, field experiences, or research in special areas in Human Development and Family Studies. Permission of department required. Typically offered Fall Spring Summer.

### **HDFS 30501 - Art, Music And Movement In Early Childhood**

Credit Hours: 3.00. Course will focus on the development of expression in children of diverse backgrounds and needs. Students will develop resources and explore techniques. Discussions will include appropriate documentation and display of children's work. Experiences with music, movement, and art activities will enhance understanding of cognitive, social-emotional and physical development through expressive activities. Typically offered Fall Spring Summer.

### **HDFS 30800 - Language And Literature In Early Childhood**

Credit Hours: 3.00. Course will focus on knowledge and teaching techniques for language arts and emergent literacy appropriate to children from ages 3-8. Students will develop resources and learn to plan for experiences with language

and literature, including activities and materials such as: storytelling and story dictation, finger plays, flannel boards, and puppets. Students will consider the relation of language and literacy to cognitive, social, emotional and physical development for children from diverse background and with diverse needs. Typically offered Fall Spring Summer.

### **HDFS 31001 - Math, Science, And Social Studies In Early Childhood**

Credit Hours: 3.00. Course will focus on planning and resources for young children's cognitive, social-emotional and physical development through exploration of and interaction with materials, people and places. Students will plan logico-mathematical, physical, and social knowledge activities which are appropriate for children with diverse backgrounds and needs. In addition, students will consider the relationships between experiences with materials such as manipulatives, wood, prop boxes, foods, and other sensory rich materials and with language and expressive activities. Overall planning, including curriculum webs, will be considered.. Typically offered Fall Spring Summer.

### **HDFS 33201 - Child Care Administration**

Credit Hours: 3.00. Principles and practices of administering early childhood programs, including philosophical foundations, licensing requirements, administrative and operational decisions, home-school communication and staff support. Typically offered Fall Spring Summer.

### **HDFS 34000 - Teaching Very Young Children With Special Needs**

Credit Hours: 3.00. This course emphasizes integrative, inclusive approaches to teaching very young children with special needs, and working with their families. It provides strategies for supporting social-emotional, motor, cognitive and communicative development within the context of the early childhood setting. Typically offered Summer Fall Spring.

### **HDFS 34101 - Infants And Young Children In Family And Community**

**Prerequisite(s):** HDFS 21000 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF D- OR SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The course will focus on young children in the context of the family and larger community. Emphasis will be placed on developmental theories that illustrate children's play and active learning within a social context. Course will include opportunities for direct observation and participation with young children and their families, as well as student reflection on personal development experiences. Typically offered Fall Spring Summer.

### **HDFS 34200 - Adolescence In Family And Community**

**Prerequisite(s):** HDFS 21000 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF D- OR SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A family oriented look at adolescent development. Emphasis will be placed on personal and relational development. Course will include issues, research and application of practice topics with regard to adolescents, their families and the larger community. Typically offered Fall Spring Summer.

### **HDFS 34601 - Sexuality, Intimacy And Family Life**

**Prerequisite(s):** HDFS 21000 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF D- OR SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course examines sexuality and intimacy within the relational contexts of couples and families. Typically offered Fall Spring Summer.

### **HDFS 35001 - Internship In Early Childhood Settings**

Credit Hours: 3.00. A guided practical experience for students interested in working with young children. Students will spend 5 hours per week in any of a variety of settings serving children from ages 0-8. Under the guidance of the setting professional and the university supervisor, the student will decide on a topic for development, culminating in a student paper describing and documenting the experience. Note: This course must be taken in conjunction with one of the guided electives, associated with the Early Childhood Development minor. This course does not count for practicum credit. Typically offered Summer Fall Spring.

### **HDFS 35400 - Practicum In Early Childhood I**

**Prerequisite(s):** HDFS 30800 FOR LEVEL UG WITH MIN. GRADE OF C- AND HDFS 30501 FOR LEVEL UG WITH MIN. GRADE OF C- AND HDFS 31001 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Directed teaching for early education settings with attention to developmentally appropriate guidance. Course will focus on interaction with individual children and small groups. Students will participate in classroom activity planning, documentation of children's work and assessment. Typically offered Fall Spring Summer.

### **HDFS 37500 - Physical Aging, Health, And Behavior**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF D- OR SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is designed to provide students with knowledge concerning the effects of the aging process on physical systems of older adults. These systems include circulatory, respiratory, neurological, sensory,

musculoskeletal, reproductive, etc. Students will also learn about acute and chronic illnesses, common among the elderly. The impact of physical health on mental health, medical treatment, and long-term care will be discussed.

Typically offered Summer Fall Spring.

### **HDFS 38000 - Disability And The Family Life Cycle**

Credit Hours: 3.00. This course provides students with information related to working with the families of individuals with disabilities. It focuses on the bidirectional impact of individuals with disabilities and their families throughout the life cycle. Typically offered Summer Fall Spring.

### **HDFS 38200 - Disability And Society**

Credit Hours: 3.00. This course is designed to introduce students to disability from progressive and contemporary diversity perspectives. Students are introduced to an overview of disability history, theory, and current thinking in the field of disability studies. Students in this course will examine and analyze the service, support, and community contexts in which people with disabilities live, work, and participate. Students will also be exposed to experiential learning activities that focus on understanding the challenges faced by individuals with disability related to inclusion across an array of educational, social, political, and health related systems. Students will gain knowledge related to the range of disability policy and how it relates to professional issues for those working with individuals with disability. Typically offered Summer Fall Spring.

### **HDFS 41300 - Diversity In Families**

**Prerequisite(s):** HDFS 20500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course will explore families as located in larger social, political, and economic contexts. Impacts of race, gender, class, religion, and sexual orientation, discrimination, and oppression as related to families are examined. Students will be familiar with current issues faced by families. Typically offered Fall.

### **HDFS 42100 - Children's Social Development**

Credit Hours: 3.00. An advanced theoretical course focused on issues related to children's social development. The topics of attachment, autonomy, initiative, play, and developmentally appropriate child guidance will be explored within the context of social development. Typically offered Fall Spring Summer.

### **HDFS 43101 - Techniques Of Human Assessment**

Credit Hours: 3.00. An advanced study of the young child in the classroom. Course will include an in-depth case study of an individual child with a focus on observing and documenting children's work. Developmental assessment instruments and basic measurement theory will be discussed as it relates to teachers' observational information. Typically offered Fall Spring Summer.

### **HDFS 45001 - Practicum In Family Life Education**

Credit Hours: 3.00. Supervised work experience to actively integrate theories and knowledge gained from undergraduate studies in family and individual development.

### **HDFS 45200 - Family Resource Management**

**Prerequisite(s):** HDFS 20500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course introduces students to the concepts of family resource management. Many factors influence decisions made by individuals and families including values, goals, available resources, and the changing family, community, and global events. Emphasis will be placed on decision making and problem solving strategies as they relate to working with individuals, single-parent families, traditional families, and extended families. Typically offered Fall Spring.

### **HDFS 45501 - Practicum In Early Childhood II**

**Prerequisite(s):** HDFS 30800 FOR LEVEL UG WITH MIN. GRADE OF C- AND HDFS 30501 FOR LEVEL UG WITH MIN. GRADE OF C- AND HDFS 31001 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Open only to Early Childhood Development majors. Course will include all aspects of classroom planning, work with larger groups, documentation and observational assessment, and portfolio development. Typically offered Fall Spring Summer.

### **HDFS 45601 - Practicum With Infants And Toddlers**

**Prerequisite(s):** HDFS 22800 FOR LEVEL UG WITH MIN. GRADE OF C- AND HDFS 35400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Open only to Early Childhood Development majors. Directed in service teaching for infant and toddler settings. Course will focus on all aspects of planning and guidance for infants and toddlers, addressing overall curriculum development and observational assessment. Typically offered Fall Spring Summer.

### **HDFS 46001 - Guided Self Study For Experienced Early Childhood Development Teachers**

Credit Hours: 3.00. Status as the responsible teacher in an early childhood setting for at least 5 years, with recommendation from supervisory staff. This course will be an alternative to BHS 35500, Practicum II. It is designed

for students who already have substantial experience leading early childhood classrooms. Students will consider issues that arise in their own classroom practice. They will propose and implement changes and reflect on the results.

Typically offered Fall Spring Summer.

### **HDFS 46200 - Ethics And Professional Development In Family Life Education**

**Prerequisite(s):** HDFS 20500 FOR LEVEL UG WITH MIN. GRADE OF C- AND SOC 38300 FOR LEVEL UG WITH MIN. GRADE OF C- AND (SOC 30700 FOR LEVEL UG WITH MIN. GRADE OF C- OR HDFS 35400 FOR LEVEL UG WITH MIN. GRADE OF C-)

Course Credits: 3.00. This course is designed to educate the participant in ethical issues and ethical decision making, in the field of family life education. Students will learn to function in a wide range of settings with sensitivity to diversity issues in families. Students will be exposed to a blend of theory and practice, tackling programming issues such as sexuality education, marriage and parent education, program planning and evaluation, and other issues that affect individuals across the life span. Typically offered Fall Spring.

### **HDFS 47000 - Supervised Experience In Early Childhood Programs**

Credit Hours: 3.00. Opportunity for students who already have bachelor degrees to consolidate foundational knowledge of early childhood development, and to obtain a guided practical experience. Typically offered Summer Fall Spring.

### **HDFS 48400 - Genetic And Physiological Factors Underlying Developmental Disabilities**

Credit Hours: 3.00. This course will explore the genetic and physiological factors that contribute to the expression of some common developmental disabilities. The course will begin with a 2-week unit that explores the process by which genes influence human development, including health and behavior. A second 2-week unit will cover pre-natal development, including: sensitive periods of development, teratogenic effects, genetic counseling, prenatal diagnostic tests, difficult births and the pre-term and small-for-date baby. The third unit (2-3 weeks) will focus on the physiology of the developing human nervous system during the prenatal period, infancy and early childhood. Development of the sensory systems will be given special attention. Approximately 9-10 weeks will be devoted to discussing the etiology, diagnosis (including differential diagnoses), treatment and prognosis of some of the major developmental disabilities. Discussion will include, but not be limited to: autism spectrum disorders, attention deficit disorders, delayed development, cerebral palsy, hearing loss, impaired vision, common Mendelian genetic disorders, neuromuscular disorders and various types of mental retardation. Typically offered Summer Fall Spring.

### **HDFS 49002 - Special Topics In Human Development And Family Studies**

Credit Hours: 0.00 to 6.00. Individual or group participation in supervised reading, laboratory experiences, field experiences, or research in special areas in Human Development and Family Studies. Permission of department required. Typically offered Fall Spring Summer.

## **Industrial Engineering**

### **IE 35600 - Human Factors Design**

Credit Hours: 3.00. Engineering design and analysis of man-machine systems. Study of man's input, output, and processing subsystems. Measurement of human factors. Environmental and task considerations in the design and performance of total systems. Typically offered Fall Spring Summer.

### **IE 58300 - Design And Evaluation Of Material Handling Systems**

Credit Hours: 3.00. Analysis for design and evaluation of material handling systems with emphasis on material flow control and storage. Analytic models and simulation used. Economic justification models for material handling systems. Typically offered Fall.

## **Industrial Engineering Technology**

### **IET 10400 - Industrial Organization**

Credit Hours: 3.00. A detailed survey of organizational structures, operational, financial, marketing, and accounting activities; duties of management, planning, control, personnel, safety, wages, policy, and human factors necessary for effective management. Not open to students taking, or with credit in, IE 36600. Typically offered Fall Spring Summer.

### **IET 10600 - Principles Of Ergonomics**

Credit Hours: 3.00. This course is designed for students interested in the areas of engineering technology, industrial/operations management, and occupational health. An understanding of how to prevent musculoskeletal disorders and improve manual working conditions will be gained through the use of applicable real life exercises and exploration of research in various industries. This course will cover a general study of the musculoskeletal system as well as guidelines for lifting, reaching, seated work, machine work, hand tools and vibration. Typically offered Fall Spring Summer.

### **IET 20200 - Principles Of Industrial Robotics**

Credit Hours: 3.00. Applications of robotic principles with emphasis on the evaluation, selection and installation of robotic technology in manufacturing systems.. Typically offered Fall Spring.

### **IET 20400 - Maintaining Quality**

**Prerequisite(s):** MA 11100 FOR LEVEL UG WITH MIN. GRADE OF D- AND MA 11200 FOR LEVEL UG WITH MIN. GRADE OF D- OR MA 14700 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Analysis of the basic principles of quality control. Includes an overall view of quality control from an engineering and manufacturing perspective. Includes the statistical aspects of tolerance, concepts of variation and control charting. Typically offered Fall Spring Summer.

### **IET 22400 - Production Planning And Control**

**Prerequisite(s):** STAT 30100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Preproduction planning of the most economical methods, machines, operations, and materials for the manufacture of a product. Planning, scheduling, routing, and detailed procedure of production control. Typically offered Fall Spring.

### **IET 25000 - Fundamentals Of Production Cost Analysis**

**Prerequisite(s):** IET 10400 FOR LEVEL UG WITH MIN. GRADE OF D AND MA 15300 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Surveys of fundamental mechanics of accounting, principles of account classification, financial and operating statements, and the generation of cost data according to cost accounting principles. Surveys the generation of cost data according to the principles of engineering economy. Examines applications of cost accounting data and engineering economy cost data to specific management decision areas through selected case problems. Typically offered Fall Spring.

### **IET 25200 - Teaching Indirect Labor Control**

**Prerequisite(s):** IET 104 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. The study of the characteristics and importance of indirect and service sectors of our business, industrial, and government economy. Topics covered in the course include size and cost factors of indirect and service lab, problems encountered in measurement and control, human relations aspects associated with employees in these areas, selling proposals, and implementing programs.. Typically offered Summer Fall Spring.

### **IET 26200 - Motion Study Work Methods**

**Prerequisite(s):** IET 10400 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. The study of the various techniques of motion study including process charts, operation charts, multiple activity charts, micro and memo motion study, therbligs, the video camera, along with actual practice in their use. Study and application of the basic principles used to develop better methods of performing work. Typically offered Fall Spring.

### **IET 26400 - Fundamentals Of Lean Work Design**

**Prerequisite(s):** MA 14700 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. This course focuses on work methods design. Fundamental problem solving techniques and Lean methodology are applied to solve work methods issues and design proper work systems. Work methods tools are used to conduct macro and micro system analysis and various work measurement techniques are learned including time study, predetermined time systems, work sampling and computer based standard time data. Typically offered Fall Spring.

### **IET 26600 - Work Measurement Incentive**

**Prerequisite(s):** IET 10400 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. A study of the fundamentals of time study and work measurement with actual practice in their use. Includes stop watch time study, measuring work with video camera, the establishment of allowances by both stopwatch and work sampling studies, the establishment and use of predetermined time values, and the construction and use of formulae for work measurement. Typically offered Fall Spring.

### **IET 26800 - Facilities Planning**

**Prerequisite(s):** IET 10400 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Arrangement of stock, machine, layout of aisles, and use of space, and material handling for the highest efficiency of production.. Typically offered Fall Spring.

### **IET 27200 - Job Evaluation**

Credit Hours: 2.00 or 3.00. (OLS 27200) A survey of the basic principles and significance of job evaluation. An analysis of current practices and techniques used in job analysis, job descriptions, and job evaluation. Typically offered Fall Spring Summer.

### **IET 27300 - Principles Of Quality And Process Improvement**

Credit Hours: 3.00. This course focuses on the management culture, philosophy, practices, and processes necessary to develop a total quality orientation. The course bridges quantitative, behavioral, and strategic concepts for designing organizations to be dynamic, integrated systems whose outputs are monitored for quality and continuously improved. Typically offered Fall Spring Summer.

### **IET 29600 - IT Case Problems**

Credit Hours: 2.00. Application of theories developed in the several industrial technology courses to select general case problems - to provide practice in the integration of principles. . Typically offered Fall Spring.

### **IET 29900 - Industrial Engineering Technology**

Credit Hours: 1.00 to 9.00. Hours and subject matter to be arranged by staff. Typically offered Fall Spring.

### **IET 30100 - Cost Evaluation And Control**

**Prerequisite(s):** IET 25000 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Develops the tools for designing, installing, and improving cost systems in industry, including the establishment of basic standards. Cost systems are examined with reference to estimating, scheduling, facilities planning, and making economic evaluations. Microcomputers will be utilized in this course.. Typically offered Fall Spring.

### **IET 30800 - Engineering Project Management And Economic Analysis**

Credit Hours: 3.00. Introduction to principles of engineering project management and techniques. Topics include technical feasibility studies, project specifications, scheduling validation, lifecycle costing, and economic analysis. The focus is on managing an engineering project through scheduling, budgeting, resource management, execution, and control. Typically offered Summer Fall Spring.

### **IET 31000 - Plant Layout And Material Handling**

**Prerequisite(s):** MET 10000 FOR LEVEL UG WITH MIN. GRADE OF D- AND IET 26400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Plant layout involves the design of a production system. The layout must provide for machines, work places, material handling systems, and storage in the capacities necessary so feasible schedules can be met for parts and products; auxiliary services such as offices, shipping and handling, security, maintenance, etc., must support the firm's requirements for safe and efficient production. The design of this system must possess an appropriate degree of flexibility to cope with future design change, new products, volume variations and advancing technology. Typically offered Fall Spring Summer.

### **IET 31100 - International Quality Standards**

Credit Hours: 3.00. This course addresses what compliance with ISO and other international standards means to an organization and how an organization may attain certification. Students will gain a working understanding of standards, requirements, and methodologies of compliance. Emphasis will be on how implementation of the standards can serve as one of the building blocks of an organization's quality system. Typically offered Fall Spring Summer.

### **IET 31200 - Materials Handling**

**Prerequisite(s):** IET 26800 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. A survey of materials handling elements, the unit load, packaging, bulk handling, the economics of materials handling, improving existing handling methods, justification for handling equipment, special handling techniques, and the management of the materials handling division in the industrial organization.. Typically offered Fall Spring.

### **IET 32500 - Essentials Of Logistics**

**Prerequisite(s):** IET 22400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Students shall learn the elements of business objective logistics, increase of greater asset productivity, building customer loyalty and market share. Integration of real-time information technology to make production and distribution more efficient, global competition and global technology and elimination of lengthy distribution channels. Typically offered Fall Spring Summer.

### **IET 34400 - Introduction To Simulation**

**Prerequisite(s):** IET 22400 FOR LEVEL UG WITH MIN. GRADE OF D AND IET 10400 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. An introduction to simulation techniques using commercial software packages. Topics include modeling new or existing manufacturing systems, capacity analysis, inventory control, and modeling for production scheduling analysis. Typically offered Fall Spring.

### **IET 35200 - Operations Management**

Credit Hours: 3.00. This course provides an understanding of the concepts involved in designing and managing manufacturing and service systems. Topics include manufacturing strategy, inventory systems, work analysis and

design, production planning, quality management, process design, and lean manufacturing. Case studies and articles integrate these topics and highlight managerial implications. Typically offered Summer Fall Spring.

### **IET 35500 - Statistical Process Control I**

**Prerequisite(s):** STAT 30100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Evaluation, analysis and installation of various procedures that comprise total quality control. Market research, product design, manufacturing planning, purchasing, production, and delivery are covered. Data analysis, quality improvement, quality design and vendor relations are included. Typically offered Fall Spring Summer.

### **IET 36400 - Total Quality Control**

**Prerequisite(s):** IET 10400 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. This course is aimed at determining customer needs and wants and interpreting these into design during production, follow-up on field performance, and feeding back quality information to further improve the quality system. Typically offered Fall Spring.

### **IET 36500 - Statistical Process Control II**

**Prerequisite(s):** IET 35500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A continuation of IET 355. Product control and acceptance techniques, customer relations, and quality assurance are covered. Typically offered Fall Spring Summer.

### **IET 40200 - Logistics And The Global Supply Chain**

**Prerequisite(s):** IET 22400 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Students shall learn the elements of business objective logistics, increase of greater asset productivity, building customer loyalty and market share. Integration of real time information technology to make production and distribution more efficient, global competition and global technology and elimination of lengthy distribution channels. Typically offered Fall Spring Summer.

### **IET 41100 - Applications Of Lean And Six Sigma Methodologies**

**Prerequisite(s):** IET 27300 FOR LEVEL UG WITH MIN. GRADE OF D- AND IET 35500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This hands-on course focuses on emerging business practices that are geared toward making an organization more effective and efficient. Highlighted topics will include use of lean and six sigma methodologies in today's business environments. These methods are used for achieving long term profits through customer satisfaction, waste elimination, and elevation of employee skills to eliminate waste and defects at the source. Application of these methods in various environments such as service, health care and manufacturing organizations will be explored. Students are expected to work in teams to apply systematic problem solving processes to solve case studies and/or real-world issues. Supporting concepts such as implementation of new business practices and culture change will also be explored. Typically offered Fall Spring.

### **IET 45000 - Production Cost Analysis**

Credit Hours: 3.00. An introduction to financial statements and to the study of the costs of production in terms of break-even and least cost alternatives, including present and future costs when related to the time value of money, budgeting, labor and overhead, production cost control, and the role of the supervisor and the engineering technologist to cost control. Computer applications for determining rate of return for complex problems are introduced. Typically offered Fall Spring.

### **IET 45100 - Monetary Analysis For Industrial Decisions**

**Prerequisite(s):** (MA 15300 FOR LEVEL UG WITH MIN. GRADE OF D OR MA 15400 FOR LEVEL UG WITH MIN. GRADE OF D OR MA 22300 FOR LEVEL UG WITH MIN. GRADE OF D) AND IET 10400 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. An introduction to the time value of money and how it relates to capital investments, equipment replacement, production cost, and various engineering technology alternatives. Not open to students who have had IET 25000. Typically offered Fall Spring Summer.

### **IET 49500 - Senior Project Survey**

**Prerequisite(s):** OLS 33100 FOR LEVEL UG WITH MIN. GRADE OF D- AND IET 30800 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Students will consider several projects and develop a topic for the following IET 49700 course. They will develop project scope, establish time schedules, and give a written and oral report on their proposal. Typically offered Fall Spring Summer.

### **IET 49700 - Senior Project**

**Prerequisite(s):** IET 49500 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Directed work on individual projects for senior industrial engineering technology students. Typically offered Fall Spring Summer.

### **IET 49900 - Industrial Engineering Technology**

Credit Hours: 1.00 to 9.00. Hours and subject matter to be arranged by staff. Course may be repeated for credit. Typically offered Fall Spring Summer.

### **IET 51000 - Product And Process Development Optimization**

Credit Hours: 3.00. Product and process development and optimization is an efficient statistical procedure for planning a series of experiments such that the data obtained can be analyzed to yield valid and objective conclusions. It can be used to screen a set of variables to identify those with most effect, optimize an experimental process or retrospectively analyze a set of experimental data. Both the design and analysis steps require the application of techniques for statistical data analysis. Typically offered Fall Spring.

### **IET 52000 - Enterprise Quality Planning And Analysis**

**Prerequisite(s):** IT 50700 FOR LEVEL UG WITH MIN. GRADE OF C- OR IT 50800 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course provides advanced quality techniques required for improving quality, reliability and maintenance in modern business enterprises by providing essential tools. The course will focus on problem solving and team sessions with high participation of students. Instructor permission required. Typically offered Fall Spring.

### **IET 56000 - Discrete Event Simulation**

Credit Hours: 3.00. This course provides students opportunity to apply discrete event system simulation to design, analyze, and improve complex systems such as business and industrial systems. Theoretical background of discrete event process simulation concepts will be covered. Topics include systems concepts, modeling systems using discrete events, and modeling of various industrial and commercial systems through simulation. Theoretical topics include random variable generation, model verification and validation, statistical analysis of output, variance reduction techniques and optimization via simulation. High-level commercial simulation languages will be utilized. Students will complete and present a simulation project. Graduate student status or senior status with instructor approval. Leveling courses may be required based upon student undergraduate degree. Typically offered Fall Spring Summer.

### **IET 58100 - Workshop In Industrial Engineering Technology**

Credit Hours: 0.00 to 8.00. Advanced study of technical and professional topics. Emphasis is on new developments relating to technical, operational, and training aspects of industry and technology education. Typically offered Fall Spring Summer.

### **IET 59000 - Special Problems In Industrial Engineering Technologies**

Credit Hours: 1.0 to 6.0. Intensive individual study of selected current developments and issues in Industrial Engineering Technology. A faculty sponsor is required for this course. Does not substitute for either M.S. thesis or M. S. project credit. Permission of instructor required. Typically offered Fall Spring Summer.

## **Information Systems**

### **ISM 10200 - Computer Utilization For Management**

Credit Hours: 3.00. An introduction to computer application software with an emphasis on use within the management area. Topics include word processing, spreadsheets, presentations, and databases, with applications targeted specifically for marketing, finance, human resource, accounting and economics. Typically offered Summer Fall Spring.

### **ISM 21100 - Principles Of Information Systems**

**Prerequisite(s):** MGMT 10200 FOR LEVEL UG WITH MIN. GRADE OF C- OR ISM 10200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An introduction to information systems from the perspective of a manager. This course provides an overview of information systems, system theory, human information processing, and current legal and ethical issues relating to computer usage. The focus is on the impact that computer-based systems can have on accounting, finance, human resources, marketing, operations, and sales. Topics include e-business, databases, supply-chain management, customer-relationship management, enterprise resource planning, etc. Extensive lab exercises on advanced spreadsheet and database management applications in business context are assigned. Typically offered Fall Spring.

### **ISM 30700 - System Analysis And Design**

**Prerequisite(s):** ISM 21100 FOR LEVEL UG WITH MIN. GRADE OF C- OR MGMT 21100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course introduces the information systems students to the procedural requirements of the systems development life cycle (SDLC). A case study approach is used to introduce the students to the techniques of systems planning, analysis, design, implementation, and evaluation. Typically offered Fall Spring Summer.



### **ISM 30800 - Database Management Analysis And Design**

Credit Hours: 3.00. This course discusses the functions and components of database management systems and the role of databases in the Systems Development Life Cycle. Both relational and object oriented database techniques are discussed. Data modeling tools presented include enterprise models, entity relationship diagrams, the data dictionary, object diagrams, and normalization techniques. Also, the role and function of the Database Administrator are addressed. Typically offered Fall Spring Summer.

### **ISM 31100 - Management Information Systems**

**Prerequisite(s):** MGMT 10200 FOR LEVEL UG WITH MIN. GRADE OF C- OR ISM 10200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An introduction to the capabilities, limitations, and applications of computers in the business environment. Topics include information systems, hardware, software, data management, telecommunications and networking, decision support, artificial intelligence, expert systems, security, privacy, ethical issues in information systems, and implementation of effective information technology (IT) utilization. Typically offered Fall Spring Summer.

### **ISM 31800 - E-Business Strategy**

**Prerequisite(s):** MGMT 31100 FOR LEVEL UG WITH MIN. GRADE OF C- OR ISM 31100 FOR LEVEL UG WITH MIN. GRADE OF C- OR MGMT 21100 FOR LEVEL UG WITH MIN. GRADE OF C- OR ISM 21100 FOR LEVEL UG WITH MIN. GRADE OF C- OR GBG 35400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An overview of e-business from design to operations of organizations engaging in the fast-paced highly competitive, global environment of e-commerce. Topics include the impact of e-business, strategic use of IT for competitive advantage, e-business impact on organization, globalization, and the impact on options created through applied IT. It is designed for students pursuing leadership roles in defining IT policy and strategy. Typically offered Fall Spring.

### **ISM 32000 - Advanced Spreadsheet Applications For Business**

**Prerequisite(s):** MGMT 21100 FOR LEVEL UG WITH MIN. GRADE OF C- OR ISM 21100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course can be used as a business elective for BS of Management majors to prepare students to analyze data and solve real-life business problems, using Microsoft Excel as a tool. Moving beyond the basic point and click focus of most computer application texts, it challenges students to use critical thinking and analysis to find efficient and effective solutions to real-life situations. Topics include statistical analysis tools, data visualization and manipulation, logics in decision making, financial analysis, what-if analyses, goal-seek tools, and solver model. Typically offered Fall Spring Summer.

### **ISM 32200 - E-Business Applications**

**Prerequisite(s):** (MGMT 21100 FOR LEVEL UG WITH MIN. GRADE OF C- OR ISM 21100 FOR LEVEL UG WITH MIN. GRADE OF C-) AND (MGMT 32400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ISM 32400 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 3.00. This course can be used as a business elective for BS Management majors. The course content takes an in-depth look at Web design concepts and techniques. The course examines theoretical concepts that make the world of Web design unique. Also, this course adopts a practical hands-on approach when examining Web page styles. Along with examining different coding techniques and technologies, this course explores the advancement of Web development, as well as, E-business problem solving strategies. Typically offered Fall Spring Summer.

### **ISM 32500 - Logistics**

Credit Hours: 3.00. This course analyzes the elements of business logistics. The course will focus on the integration of real-time information technology to increase the effectiveness of production and distribution. Global competition and technology and channels of distribution will also be discussed. Typically offered Fall Spring.

### **ISM 40800 - Data Mining**

**Prerequisite(s):** BUSM 22500 FOR LEVEL UG WITH MIN. GRADE OF C- AND (ISM 30800 FOR LEVEL UG WITH MIN. GRADE OF C- OR MGMT 30800 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 3.00. This course will provide the participants with understanding of the fundamental data mining methodologies, and with the ability of formulating and solving problems with them. The particular attention will be paid to practical, efficient and statistically sound techniques, capable of providing not only the requested discoveries, but also the estimates of their utility. Typically offered Fall Spring Summer.

### **ISM 41600 - Information Systems Control And Audit**

**Prerequisite(s):** MGMT 31100 FOR LEVEL UG WITH MIN. GRADE OF C- OR ISM 31100 FOR LEVEL UG WITH MIN. GRADE OF C- OR MGMT 21100 FOR LEVEL UG WITH MIN. GRADE OF C- OR ISM 21100 FOR

LEVEL UG WITH MIN. GRADE OF C- OR GBG 35400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course presents an introduction to information systems control and audit. The focus is on the critical role that information systems play in the safeguarding of assets and in the efficient utilization of resources, as well as on the compliance of information systems with control and regulatory frameworks. Typically offered Fall Spring Summer.

### **ISM 41700 - Business Problem Solving With Advanced Spreadsheet**

**Prerequisite(s):** MGMT 21100 FOR LEVEL UG WITH MIN. GRADE OF C- OR ISM 21100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. The course addresses the need of using advanced spreadsheet application to analyze and solve business problems. This course will be offered as an elective course for MIS/CIS majors and other business major/minor students in the School of Management. It is a design project/undergraduate research experiential course where students will learn the process of designing and implementing solutions for business problems with spreadsheets. Typically offered Fall Spring Summer.

### **ISM 41800 - Knowledge Management And Business Intelligence**

**Prerequisite(s):** MGMT 21100 FOR LEVEL UG WITH MIN. GRADE OF C- OR ISM 21100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course explores the theories, strategies, methods, and tools for managing organizational knowledge and making business decision more efficiently and effectively through utilizing intelligent Information Systems (IS) in a fast-paced, highly competitive, global environment. Topics include decision making process and modeling, decision support systems, expert systems, artificial intelligence, data mining, knowledge representation and reasoning, etc. Typically offered Fall Spring Summer.

### **ISM 48300 - Business Data Communications**

**Prerequisite(s):** MGMT 21100 FOR LEVEL UG WITH MIN. GRADE OF C- OR ISM 21100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course can be used as a business elective for BS management majors. It introduces the subject of data communication and the use of telecommunication in business applications. Topics include client-server architecture, network hardware and software, distributed computing, key issues in telecommunication and network management, and the fundamentals of data communications. In addition to this, the course covers both legacy networks and modern high-speed networks used in business communications. Typically offered Fall Spring Summer.

### **ISM 48600 - Project Management**

**Prerequisite(s):** MGMT 31100 FOR LEVEL UG WITH MIN. GRADE OF C- OR ISM 31100 FOR LEVEL UG WITH MIN. GRADE OF C- OR MGMT 21100 FOR LEVEL UG WITH MIN. GRADE OF C- OR ISM 21100 FOR LEVEL UG WITH MIN. GRADE OF C- OR GBG 35400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. The application of the knowledge, skills, and techniques that project managers use to manage projects. Emphasis is placed on learning and applying concepts of Project Management Body of Knowledge (PMBOK), which includes integration, scope, time, cost, quality, human resource, communication, and procurement aspects. Typically offered Fall Spring.

### **ISM 48700 - Knowledge And Decision Management**

**Prerequisite(s):** MGMT 21100 FOR LEVEL UG WITH MIN. GRADE OF C- OR ISM 21100 FOR LEVEL UG WITH MIN. GRADE OF C- OR MGMT 31100 FOR LEVEL UG WITH MIN. GRADE OF C- OR ISM 31100 FOR LEVEL UG WITH MIN. GRADE OF C- OR GBG 35400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course explores the application of Decision Support Systems (DSS), Expert Systems (ES), and Knowledge Management Systems (KMS) to a company's strategic decision-making process. Topics include the decision-making process, decision contexts and types, expert system opportunities, knowledge management, and the roles of decision-making tools. Typically offered Fall Spring.

### **ISM 48801 - E-Auction In Practice**

**Prerequisite(s):** (MGMT 21100 FOR LEVEL UG WITH MIN. GRADE OF C- OR ISM 21100 FOR LEVEL UG WITH MIN. GRADE OF C-) AND (MGMT 31100 FOR LEVEL UG WITH MIN. GRADE OF C- OR GBG 35400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ISM 31100 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 3.00. The course will cover fundamentals of e-Auction and exchange instruments and provide an immersion experience via projects and classroom experiments designed to provide experiential learning and using case studies and hands-on online store practice. Typically offered Fall Spring Summer.

### **ISM 48901 - Enterprise Resource Planning Implementation**

**Prerequisite(s):** CIS 25200 FOR LEVEL UG WITH MIN. GRADE OF C OR MGMT 30700 FOR LEVEL UG WITH MIN. GRADE OF C OR ISM 30700 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This class studies the types of issues that managers will need to consider in implementing cross-functional integrated enterprise systems. The objective of this course is to make students aware of the potential and limitations of enterprise resource planning implementation. This objective will be reached through case studies, lectures, guest speakers, and a real-world project. Typically offered Fall Spring Summer.

### **ISM 49500 - Internship In Management Information Systems**

Credit Hours: 0.00 to 4.00. A special course in selected areas of management information systems, designed to provide practical field experience under professional supervision in selected situations related to the student's area of specialization. Typically offered Fall Spring Summer.

### **ISM 49900 - Undergraduate Research In Management Information Systems**

Credit Hours: 3.00. Students will work with a faculty member on a research project in their major. They will contribute to ongoing research while learning current research techniques in management. During this process the students will develop critical thinking and oral and written communication skills. If human subjects are to be involved, proper IRB clearance will be obtained in advance. Typically offered Fall Spring Summer.

## **Information Technology**

### **IT 50700 - Measurement And Evaluation In Industry And Technology**

Credit Hours: 3.00. (TECH 50700 - PUI) An introduction to measurement strategies in industrial, technical, and human resource development environments. The evaluation of measurement outcomes will be the primary focus of the course. Typically offered Fall Spring Summer.

### **IT 50800 - Quality And Productivity In Industry And Technology**

Credit Hours: 3.00. (AT 50800) Examines the contemporary issues of continuous improvement in quality and productivity in manufacturing and service industries. Includes a close examination of the evolving philosophies bearing on the scope, improvement, and costs of quality assurance programs in industry and technology. Typically offered Summer Fall Spring.

### **IT 53500 - Global Supply Chain Management**

Credit Hours: 3.00. The objective of this course is to provide in-depth knowledge of global supply chain management and its application in industries. This course explores supply chain management, expanding beyond the linkage between producer and distributor to include other enterprises in the product life cycle, beginning with concept design and ending in disposal. Learning methodologies include lecture, case study, and collaborative student group activities in applied research. Permission of department required. Typically offered Fall.

### **IT 57100 - Project Management In Industry And Technology**

Credit Hours: 3.00. The factors influencing decisions during the initiation, implementation, and termination of industrial and manufacturing projects are examined. Students work as project teams, using project management tools to develop implementation strategies. Permission of instructor required. Typically offered Fall Spring Summer.

## **Information Technology Systems**

### **ITS 10000 - Information Technology Fundamentals**

Credit Hours: 3.00. This is the freshman experience course that also covers pervasive themes in IT, organization issues, and history of IT, IT and its related informing disciplines, application domains, computer math, and other IT topics. Typically offered Summer Fall Spring.

### **ITS 11000 - Web Systems Technology**

Credit Hours: 3.00. This course covers web technologies, information architecture, digital media, web development, vulnerabilities, social software, and other topics. Typically offered Summer Fall Spring.

### **ITS 12000 - Information Technology Interaction**

Credit Hours: 3.00. This course covers human factors, HCI aspects of application domains, human-centered evaluation, developing effective interfaces, accessibility, emerging technologies, human-centered software and other topics. Typically offered Summer Fall Spring.

### **ITS 13000 - Platform Technologies**

Credit Hours: 3.00. This course covers architecture and organization, computer infrastructure, enterprise deployment software, firmware, hardware and other topics. Typically offered Summer Fall Spring.

### **ITS 13500 - Operating Systems Technologies**

Credit Hours: 3.00. This course covers operating systems concepts, applications, administrative activities, installation, customization, maintenance, security, and other topics. Typically offered Fall Spring Summer.

### **ITS 14000 - Introduction To Computer Algorithms And Logic**

Credit Hours: 3.00. This course introduces basic concepts of computer programming through the development of algorithms and logic to different types of real-world problems. It emphasizes on developing problem-solving skills required for creating software solutions. The course covers computer system basics, software development process,

basic programming structures, constructs and data structures, and methods for developing algorithms and logic. Extensive laboratory assignments are assigned. Typically offered Fall Spring Summer.

### **ITS 17000 - Networking Technologies**

Credit Hours: 3.00. This course covers routing and switching, physical layer, foundations of networking, security, application considerations, network management, and other topics. Typically offered Summer Fall Spring.

### **ITS 19900 - Topics In Information Technology I**

Credit Hours: 1.00 to 4.00. This course covers topics in information technology or security topics. Typically offered Summer Fall Spring.

### **ITS 20000 - Ethical And Legal Issues IT**

Credit Hours: 3.00. This course covers professional communications, social context of computing, teamwork concepts and issues, intellectual properties, legal issues in computing, organization context, professional and ethical issues, responsibilities, privacy and civil liberties, and other topics. Typically offered Summer Fall Spring.

### **ITS 24000 - Programming Fundamentals**

**Prerequisite(s):** MA 20500 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND ITS 14000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course covers fundamental programming techniques using a particular programming language while focusing on problem-solving skills. Topics include primitive and custom data types, control structures, simple data structures and an introduction to object-oriented programming. Typically offered Fall Spring.

### **ITS 24500 - Integrative Programming**

**Prerequisite(s):** ITS 24000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course covers in-depth discussions of object-oriented programming and application development through integration. Topics include object-oriented programming concepts and object-oriented design, classes, objects, interfaces, inheritance, association, polymorphism, software framework/library, file system processing, event-driven programming, GUI-based programming, data access, basic networking programming. Extensive laboratory assignments are assigned. Typically offered Fall Spring Summer.

### **ITS 25000 - Fundamentals Of Information Assurance**

**Prerequisite(s):** ITS 13500 FOR LEVEL UG WITH MIN. GRADE OF C- AND ITS 17000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course covers security mechanisms, fundamental aspects, operational issues, policy, attacks, security domains, forensics, information states, security services, threat analysis, vulnerabilities, and other topics. Typically offered Summer Fall Spring.

### **ITS 26000 - Applied Database Technologies**

**Prerequisite(s):** ITS 24000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course covers database query languages, information management concepts and fundamentals, data organization, data modeling, managing the database environment, special-purpose databases, and other topics. Typically offered Summer Fall Spring.

### **ITS 27000 - Internetworking Technologies**

**Prerequisite(s):** ITS 17000 FOR LEVEL UG WITH MIN. GRADE OF C AND ITS 14000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course covers requirements, acquisition/sourcing, integration, project management, testing and quality assurance, organizational context, architecture and other topics. Typically offered Summer Fall Spring.

### **ITS 29900 - Topics In Information Technology II**

Credit Hours: 1.00 to 4.00. This course covers topics in information technology or security topics. Typically offered Summer Fall Spring.

### **ITS 30000 - Simulation And Game Development I**

**Prerequisite(s):** ITS 24500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course covers the concepts, methods, and techniques of simulation and game development programming. This course focuses on the mathematics related to game development, game and simulation programming techniques, algorithm design, data structures, game-specific software development, as well as the technical aspects of game testing. Extensive laboratory exercises are assigned. Typically offered Summer Fall Spring.

### **ITS 33000 - Advanced Operating Systems**

**Prerequisite(s):** ITS 24500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course covers the comparison and contrast of operating systems, the detailed examination of

architecture, customization and implementation of the features of specific operating systems. Extensive laboratory exercises are assigned. Typically offered Summer Fall Spring.

### **ITS 34000 - Advanced Programming**

**Prerequisite(s):** ITS 24500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course covers in-depth discussions of data structures and associated algorithms, memory management, and concurrent programming. Topics include memory structures, allocation and release, object reference counting, garbage collection, arrays, lists, stacks, queues, trees, graphs, heaps, hash tables, recursion, searching and sorting, multithread programming and synchronization, as well as the latest developments in advanced programming techniques. Extensive laboratory exercises are assigned. Typically offered Fall Spring Summer.

### **ITS 35000 - Systems Assurance**

**Prerequisite(s):** ITS 25000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course covers the implementation of systems assurance with computing systems. Topics include confidentiality, integrity, authentication, non-repudiation, intrusion detection, physical security, and encryption. Extensive laboratory exercises are assigned. Typically offered Summer Fall Spring.

### **ITS 35200 - Disaster Recovery And Planning**

**Prerequisite(s):** ITS 25000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course covers risk management and business continuity. Topics include disaster recovery strategies, mitigation strategies, risk analysis and development of contingency plans for unexpected outages and component failures. Extensive laboratory exercises are assigned. Typically offered Summer Fall Spring.

### **ITS 35400 - Information Assurance Risk Assessment**

**Prerequisite(s):** ITS 35000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course covers industry and government requirements and guidelines for information assurance and auditing of computing systems. Topics include risk assessment and implementation of standardized requirements and guidelines. Typically offered Summer Fall Spring.

### **ITS 35600 - Securing Wireless Systems**

**Prerequisite(s):** ITS 25000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course covers the implementation of secure wireless systems and computing systems. Topics include, intrusion detection, physical security, communications security and encryption with wireless systems. Extensive laboratory exercises are assigned. Typically offered Summer Fall Spring.

### **ITS 36000 - Distributed Application Architecture And Design**

**Prerequisite(s):** ITS 26000 FOR LEVEL UG WITH MIN. GRADE OF C AND ITS 24500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course covers the topics of multi-tier application development, interface design and implementation, client side scripting, server side scripting, backend database integration, component based application development, and configuration of multi-tier applications, as well as the latest developments in distributed application development. Extensive laboratory exercises are assigned. Typically offered Fall Spring Summer.

### **ITS 36200 - Distributed Application Development**

**Prerequisite(s):** ITS 36000 FOR LEVEL UG WITH MIN. GRADE OF C AND ITS 34000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course covers the topics of multi-tier application development, interface design and implementation, client side scripting, server side scripting, backend database integration, component based application development, and configuration of multi-tier applications, as well as the latest developments in distributed application development. Extensive laboratory exercises are assigned. Typically offered Fall Spring Summer.

### **ITS 36400 - Database Modeling And Implementation**

**Prerequisite(s):** ITS 36000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This is an advanced course that covers the design of distributed databases, data modeling, normalization rules, query languages, layout and design of forms, transaction management, and implementation of the database design. Extensive laboratory exercises are assigned. Typically offered Summer Fall Spring.

### **ITS 37000 - Data Communications And Networking**

**Prerequisite(s):** ITS 27000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course covers the configuration of networks and communication conduits, error detection and correction, media, and the open system model. Typically offered Summer Fall Spring.

### **ITS 37200 - System Administration And Management**

**Prerequisite(s):** ITS 27000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course covers system performance analysis, benchmarking, acceptance testing, security strategies, file systems analysis, auditing, server roles, and best practices. Extensive laboratory exercises are assigned. Typically offered Summer Fall Spring.

### **ITS 39900 - Topics In Information Technology III**

Credit Hours: 1.00 to 4.00. This course covers topics in information technology or security topics. Typically offered Summer Fall Spring.

### **ITS 40000 - Simulation And Game Development II**

**Prerequisite(s):** ITS 30000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course is a continuation of ITS 30000 covering advanced technical aspects of simulation and game development including technology synthesis, system architectures for real-time game and simulation, network, data driven systems, and artificial intelligence. Extensive laboratory exercises are assigned. Typically offered Summer Fall Spring.

### **ITS 40400 - System Modeling And Simulation**

**Prerequisite(s):** ITS 40000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course details topics on modeling and simulation, real-time systems, rendering engines, gaming engines, gaming logic, and interactivity. It addresses a detailed study of how games function to create experiences, including rule design, play mechanics, game balancing, social game interaction, and the integration of visual, audio, tactile and textual elements into total game experience. Typically offered Summer Fall Spring.

### **ITS 40900 - Topics In Simulation And Game Development**

**Prerequisite(s):** ITS 40400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course covers special topics and emerging technologies in simulation and game development. Typically offered Summer Fall Spring.

### **ITS 43000 - Systems Programming**

**Prerequisite(s):** ITS 34000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course covers multiple platform scripting tools and script development for customization of systems features, batch operations, and automated system management. Extensive laboratory exercises are assigned. Typically offered Summer Fall Spring.

### **ITS 44000 - Mobile Application Development**

**Prerequisite(s):** ITS 34000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course focuses on developing mobile applications for multiple platforms. Topics include special considerations for devices (smartphones and tablets) with limited computational power and system resources, application development paradigms, sensor-based applications (touching, gesture, and movement), location-based applications, network programming, interactivity with data sources and application integration, testing with simulators, as well as consideration and preparation for application publishing. Strong background and experience in web and software development are expected. Typically offered Fall Spring Summer.

### **ITS 45000 - Software Assurance**

**Prerequisite(s):** ITS 34000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course covers defensive programming techniques, bounds analysis, error handling, advanced testing techniques, detailed code auditing, and software specification in a trusted assured environment. Extensive laboratory exercises are assigned. Typically offered Summer Fall Spring.

### **ITS 45200 - Computer Forensics**

**Prerequisite(s):** ITS 35200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course covers the techniques used in the forensic analysis of computerized systems for gathering evidence to detail how a system has been exploited or used. Extensive laboratory exercises are assigned. Typically offered Summer Fall Spring.

### **ITS 45400 - Assured Systems Design And Implementation**

**Prerequisite(s):** ITS 45000 FOR LEVEL UG WITH MIN. GRADE OF C OR ITS 45200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course covers the design and implementation of assured systems in an enterprise environment. Topics include hardening of operating systems, choice of platforms, design criteria within the assured systems domain. Extensive laboratory exercises are assigned. Typically offered Summer Fall Spring.

### **ITS 45900 - Topics In Information Assurance And Security**

**Prerequisite(s):** ITS 45000 FOR LEVEL UG WITH MIN. GRADE OF C AND ITS 45200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course covers special topics and emerging technologies in information assurance and security. Typically offered Summer Fall Spring.

### **ITS 46000 - Distribution Application Configuration And Management**

**Prerequisite(s):** ITS 36200 FOR LEVEL UG WITH MIN. GRADE OF C AND ITS 36400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course covers application deployment techniques, life cycle management, performance testing and tuning, maintenance, and quality assurance. Extensive laboratory exercises are assigned. Typically offered Summer Fall Spring.

### **ITS 46200 - Application Integration**

**Prerequisite(s):** ITS 36200 FOR LEVEL UG WITH MIN. GRADE OF C AND ITS 36400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course covers application integration methods using service oriented computing and various publicly available application programming interfaces (APIs), integration of disparate enterprise and Web applications, implementing interfaces between platforms and applications. Topics include data exchange formats, APIs for processing data of different formats, service creation and service consumption, as well as the latest developments in application integration. Extensive laboratory exercises are assigned. Typically offered Summer Fall Spring.

### **ITS 46900 - Topics In Distributed Enterprise Applications**

**Prerequisite(s):** ITS 46000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course covers special topics and emerging technologies in distributed enterprise applications. Typically offered Summer Fall Spring.

### **ITS 47000 - Large Scale High Performance Systems**

**Prerequisite(s):** ITS 37000 FOR LEVEL UG WITH MIN. GRADE OF C AND ITS 37200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course covers the configuration of networks and communication conduits, error detection and correction, media, and the open system model. Extensive laboratory exercises are assigned. Typically offered Summer Fall Spring.

### **ITS 47200 - Network Design And Implementation**

**Prerequisite(s):** ITS 37200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course covers the design and implementation of enterprise level networks. Topics include network topologies, protocols, technologies, services, design and architecture, and implementation of the network design. Extensive laboratory exercises are assigned. Typically offered Summer Fall Spring.

### **ITS 47900 - Topics In Networking**

**Prerequisite(s):** ITS 47000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course covers special topics and emerging technologies in networking. Typically offered Summer Fall Spring.

### **ITS 48000 - IT Project Development And Management**

**Prerequisite(s):** ITS 35000 FOR LEVEL UG WITH MIN. GRADE OF C- OR ITS 36000 FOR LEVEL UG WITH MIN. GRADE OF C- OR ITS 37000 FOR LEVEL UG WITH MIN. GRADE OF C- OR ITS 37200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course covers the planning, design, selection, and project management of information technology systems. The course contains the development of requirements, configuration of hardware and software, management of the procurement and implementation process, performance requirements, contract negotiations, and legal issues within a comprehensive project. Typically offered Summer Fall Spring.

### **ITS 49000 - Senior Project Undergraduate Research**

**Prerequisite(s):** ITS 37200 FOR LEVEL UG WITH MIN. GRADE OF D- OR ITS 45000 FOR LEVEL UG WITH MIN. GRADE OF D- OR ITS 46200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This capstone course brings together the different domains of Information Technology. The course contains topics of distributed application development, networking, information assurance and security that integrate around an unconstrained problem of substantial complexity with an undefined solution and the implementation of the design solution. Typically offered Summer Fall Spring.

### **ITS 49900 - Topics In Information Technology IV**

Credit Hours: 1.00 to 4.00. This course covers topics in information technology or security topics. Typically offered Summer Fall Spring.

### **ITS 52000 - Web Analytics And Applications**

Credit Hours: 3.00. This course covers the theory and technologies used in developing web applications in the context of eCommerce, social media, big data, information retrieval and analytics, the internet of things, web security, and other emerging web issues. Issues related to web application development, management, and security are also discussed. Permission of instructor required. Typically offered Fall Spring Summer.

### **ITS 55000 - Biometrics For Cyber Security**

Credit Hours: 3.00. This course will cover the fundamental concepts and design implications required to implement biometric systems. Key approaches and machine learning techniques specific to vision based, speech based, and behavioral based biometric systems will be discussed. Biometric system performance evaluation and issues related to security and privacy will also be addressed. Permission of Instructor required. Typically offered Fall Spring Summer.

### **ITS 55200 - Digital Forensics Techniques**

Credit Hours: 3.00. Identifying, preserving and extracting electronic evidences from computers, networks, and mobile devices. Students learn how to examine and recover data from digital information systems, core forensic procedures for any operating or file system, understanding technical issues in acquiring evidence and how to conduct forensically sound examinations to preserve evidence for admission and use legal proceedings. Typically offered Fall Spring Summer.

### **ITS 55400 - Intrusion Detection And Prevention Systems**

Credit Hours: 3.00. This course will cover the fundamental concepts and design implications required to develop and implement intrusion detection and prevention systems that address security violations in computer systems. Topics to be covered include: main classes of attacks against computer systems, taxonomy and architecture of intrusion detection and prevention systems, network traffic analysis and feature extraction algorithms, signature and anomaly based techniques, key heuristic based and machine learning based techniques and algorithms for intrusion detection. Intrusion detection and prevention systems performance evaluation and issues related to security and defense in depth will also be addressed. Typically offered Fall Spring Summer.

### **ITS 56000 - Database Management Security**

Credit Hours: 3.00. This seminar course covers the concepts of security as it applies to data and database security, including auditing methods using Oracle and SQL server. The course is an appropriate entry-level graduate course for interdisciplinary students. Students should have taken mid-level database, security, and programming classes as an undergraduate. Typically offered Fall Spring Summer.

### **ITS 56200 - Database Administration**

Credit Hours: 3.00. This seminar course covers the concepts of database administration, including topics such as architecture, advanced data management, and performance monitoring. The course is an appropriate entry-level graduate course for interdisciplinary students. Students should have taken mid-level database and programming classes as an undergraduate. Typically offered Fall Spring Summer.

### **ITS 56400 - Datawarehousing And Business Intelligence**

Credit Hours: 3.00. This seminar course covers data warehousing and business intelligence concepts, with an emphasis on dimensional modeling as it applies to business intelligence. The course is an appropriate entry-level graduate course for interdisciplinary students. Students should have taken mid-level database and programming classes as an undergraduate. Typically offered Fall Spring Summer.

### **ITS 56600 - Database Object-Oriented Modeling And Architecture**

Credit Hours: 3.00. This seminar course covers the concepts of database modeling and architecture including topics as relational modeling, advanced object-oriented modeling and object persistence. Course may be offered as classroom-based, distance or hybrid format. Prerequisite: Graduate student standing or senior status with the consent of instructor. Graduate students without an ITS background may be required to take additional leveling courses. Instructor permission required. Typically offered Fall Spring Summer.

### **ITS 56800 - Database Application Integration**

Credit Hours: 3.00. This seminar course covers the concepts of database application and integration including topics as transactional processing, data integrity and integration with the web. Typically offered Fall Spring Summer.

### **ITS 58100 - Workshop In Computer Information Technology**



Credit Hours: 0.00 to 8.00. Advanced study of technical and professional topics. Emphasis is on new development relating to technical, operational, and training aspects of industry and technology education. Permission of instructor required. Typically offered Fall Spring Summer.

### **ITS 59000 - Special Problems In Computer Information Technology**

Credit Hours: 1.00 to 6.00. Intensive individual study of selected current developments and issues in Computer Information Technology. A faculty sponsor is required for this course. Does not substitute for either M.S. thesis or M. S. project credit. Permission of instructor required. Typically offered Fall Spring Summer.

## **Interdisciplinary Studies**

### **IDIS 10001 - Undergraduate Interdisciplinary Research**

Credit Hours: 0.00. Applied Experiential research opportunity in student's major field and one other discipline, guided by a classroom instructor. Research opportunity requiring 15 hours more or less of experiential research activity during the semester. Must be taken with a credit course in the major requiring a research paper or research project. Typically offered Fall Spring Summer.

### **IDIS 10600 - Introduction To Gender Studies**

Credit Hours: 3.00. An interdisciplinary course introducing students to the study of gender as a category for social and cultural analysis. Examines how ideas about sexual and gender differences have shaped experiences in a global society. Explores construction of gender roles and sexuality; biological arguments about gender and sexuality; the interplay of gender with sexuality, class, race/ethnicity, and nationality; the ways gender shapes families, workplaces, and other institutions. Assists students in learning about theories of gender and methods of analysis in order to formulate questions about gender as it relates to their on-going work in various disciplines across the curriculum. Typically offered Fall Spring Summer.

### **IDIS 15001 - Basic Experiential Undergraduate Research**

Credit Hours: 1.00. Applied Experiential research opportunity in student's major field and one other discipline, directed by a tenure-track faculty member. Requires Level 1 research project presented in at least a classroom environment and requiring 15 hours of individual experiential research during the semester. Typically offered Fall Spring Summer.

### **IDIS 23500 - Introduction To Great Issues**

Credit Hours: 3.00. Gateway course for Bachelor of Liberal Studies students: to be completed in the first year of a BLS plan of study. Examines fundamental issues facing humanity as a measure to develop cognitive and communication skills. The course is tied thematically and substantively to the two BLS capstone courses: IDIS 43500 and IDIS 43600. Typically offered Fall Spring Summer.

### **IDIS 25001 - Intermediate Experiential Undergraduate Research**

Credit Hours: 2.00. Applied Experiential research opportunity in student's major field and one other discipline, directed by a tenure-track faculty member. Requires Level 2 research project presented in a School-wide or University-wide forum and requiring 30 hours of individual experiential research during the semester. Typically offered Fall Spring Summer.

### **IDIS 26000 - Underclass Seminar In Science And Society**

Credit Hours: 1.00 to 3.00. Seminar for majors in the curriculum in science and culture and others. The seminar will approach special problems in the area. Choice of problem areas will determine structure of the seminar. Typically offered Spring.

### **IDIS 27000 - African American Experience**

Credit Hours: 3.00. Dimensions of the African American experience, including history, education, politics, psychology, economics, religion, social organization, and art will be covered. Typically offered Spring.

### **IDIS 27200 - Introduction To Latin American Society And Culture**

Credit Hours: 3.00. A study of topics on antiquity, culture, geography, economics, ecology, national histories, ethnic identities, literature, and politics of Latin American countries. Lectures and readings primarily in English; however, students may request Spanish-language readings. Typically offered Fall Summer.

### **IDIS 29000 - Interdisciplinary Topics**

Credit Hours: 0.00 to 6.00. Course topics and patterns will vary. Typically offered Fall Spring Summer.

### **IDIS 33000 - Introduction To Jewish Studies**

Credit Hours: 3.00. An interdisciplinary course touching on the full range of Jewish experience from antiquity to the present. Several members of the Jewish Studies faculty and guest lecturers participate, representing such fields as anthropology, history, language, literature, philosophy, politics, religion, and sociology. Typically offered Spring.

### **IDIS 35001 - Advanced Experiential Undergraduate Research**

Credit Hours: 3.00. Applied Experiential research opportunity in student's major field and one other discipline, directed by a tenure-track faculty member. Requires Level 3 research project presented in a Regional or State-wide conference setting or professional meeting or a submitted/published paper (refereed journal) and requiring 45 hours of individual experiential research during the semester. Typically offered Fall Spring Summer.

### **IDIS 38000 - Gender And Multiculturalism**

Credit Hours: 3.00. This course expands students' understanding of gender issues by exploring the multicultural diversity of women's lives. It examines how race, class, sexuality, and culture interact and shape society and ecology in the United States and in a global context. Typically offered Fall Spring.

### **IDIS 43500 - Great Issues I**

**Prerequisite(s):** IDIS 23500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A consideration of major issues affecting humankind from the perspective of our total experience, with an emphasis on the historical unfolding of those issues and great thinkers' answers to them. Focus includes discussions of moral decision-making, political systems, aesthetics, religion and spirituality, our use of symbols, and the character of human nature. Open to Bachelor of Liberal Studies students with Junior or Senior standing only. Typically offered Summer Fall.

### **IDIS 43600 - Great Issues II**

**Prerequisite(s):** IDIS 43500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A continuation of IDIS 43500, examining the further development, in a historical framework, of those issues considered enduring and important. Focus on the development of the diversity of ideas and perspectives in the modern era, including questions of political organization, religion and spirituality, the evolution of science, ethics and modernity, the exercise of power, and the uses of rationality. Open to Bachelor of Liberal Studies students with Senior standing only. Typically offered Spring Summer.

### **IDIS 45001 - Undergraduate/Graduate Experiential Undergraduate Research**

Credit Hours: 4.00. Applied Experiential research opportunity in student's major field and one other discipline, directed by a tenure-track faculty member. Requires Level 4 research project presented at a National Conference or Professional Meeting or a submitted/published paper (refereed journal) and requiring more than 45 hours of individual or more than 90 hours of paired student' experiential research during the semester. Typically offered Fall Spring Summer.

### **IDIS 48200 - Interdisciplinary Studies In Sexuality: Scholarship On Lesbian And Gay Issues**

Credit Hours: 3.00. This course offers an interdisciplinary introduction to recent work in lesbian and gay studies in various fields, including literature, history, film, cultural theory, medicine, law, and studies of sexuality. Typically offered Fall Spring.

### **IDIS 48400 - Ethnic Nationalism In The Modern World**

Credit Hours: 3.00. Questions of ethnic/national identity have been central to the development of the modern world. In this course, students will gain an understanding of the conceptual framework of theories of ethnicity and nationality, how these concepts change over time, and the influence of ethnicity on the development of national character, inter-group relations, international politics, the migration of peoples, and the dynamics of cultural variation in the modern world. Typically offered Fall Spring Summer.

### **IDIS 49000 - Directed Reading in Interdisciplinary Studies**

Credit Hours: 1.00 to 3.00. Reading under the direction of the instructor in a particular field of study. Permission of instructor required. Typically offered Fall Spring Summer.

### **IDIS 49100 - Special Topics In Interdisciplinary Studies**

Credit Hours: 1.00 to 4.00. Special topics or projects under the direction of the instructor in a particular field of specialization. Typically offered Fall Spring Summer.

## **Italian**

### **ITAL 10100 - Italian Level I**

Credit Hours: 3.00. A beginning Italian course with emphasis on communicative skills (listening and speaking), literacy (reading and writing) and culture. Typically offered Fall Spring Summer.

### **ITAL 10200 - Italian Level II**

**Prerequisite(s):** ITAL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Continuation of ITAL 10100. Typically offered Fall Spring Summer.

### **ITAL 20100 - Italian Level III**

**Prerequisite(s):** ITAL 10200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A continuation of ITAL 10200. Typically offered Fall Spring Summer.

### **ITAL 20200 - Italian Level IV**

**Prerequisite(s):** ITAL 20100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An intermediate Italian course with emphasis on communicative skills (listening and speaking), literacy skills (reading and writing) and culture. Typically offered Fall Spring Summer.

## Japanese

### **JPNS 10100 - Japanese Level I**

Credit Hours: 3.00 or 4.00. A basic study of standard Japanese. Students will be introduced to spoken and written forms of the language from the beginning. Language form and use are equally emphasized. Relevant cultural aspects. Hiragana, Katakana, and 85 Kanji. Typically offered Fall Spring Summer.

### **JPNS 10200 - Japanese Level II**

**Prerequisite(s):** JPNS 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00 or 4.00. A continuation of the study of elementary Japanese. Task-oriented activities will be incorporated to encourage language use as well as pattern practice for linguistic accuracy. Relevant cultural aspects will be introduced. 120 Kanji. Typically offered Fall Spring Summer.

### **JPNS 20100 - Japanese Level III**

**Prerequisite(s):** JPNS 10200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00 or 4.00. A study of intermediate Japanese. Occasional use of authentic materials for listening and reading practice. Task-oriented exercises, communicative activities, and pattern practice are used to facilitate learning of the spoken and written language. 110 Kanji. Typically offered Fall Spring Summer.

### **JPNS 20200 - Japanese Level IV**

**Prerequisite(s):** JPNS 20100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00 or 4.00. A continuation of intermediate Japanese. Active use of authentic materials for listening and reading practice. Task-oriented exercises, communicative activities, and pattern practice for learning of the spoken and written language. 150 Kanji. Typically offered Fall Spring Summer.

## Latin

### **LATN 10100 - Latin Level I**

Credit Hours: 3.00. Introduction to classical Latin language. Focus on grammar, syntax, vocabulary, and elementary readings. Typically offered Fall Spring Summer.

### **LATN 10200 - Latin Level II**

Credit Hours: 3.00. Second semester introduction to Latin. Focus on grammar, syntax, vocabulary, and elementary readings in classical Latin and the language of the Vulgate. Typically offered Fall Spring Summer.

## Latin American Literature Studies

### **LALS 10100 - Introduction To Latin American Studies**

Credit Hours: 3.00. This course outlines the political, social, cultural, and historical dimensions of Latin America organized in thematic units. Topics cover from the cultural heritage of Spain and the pre-Spanish civilizations to contemporary Latin America. Course conducted in English. Typically offered Fall Spring Summer.

## Latin American Studies

### **LAS 20100 - The Hispanic American Experience**

Credit Hours: 3.00. Dimensions of the Hispanic American experience, including history, education, politics, psychology, economics, religion, social organization, and art are covered in the course. Typically offered Fall Spring Summer.

### **LAS 27100 - Latin American To 1824**

Credit Hours: 3.00. A survey of Latin American history from its origins to the end of the major movements toward independence, with emphasis on discovery, colonization, expansion, and the transfer of institutions from Spain and Portugal. Typically offered Fall Spring Summer.

### **LAS 27200 - Latin American Since 1824**

Credit Hours: 3.00. A survey of Latin American history from independence to the present with particular attention on political, economic, and social problems connected with modernization. Typically offered Fall Spring Summer.

### **LAS 33000 - United States And Latin America**

Credit Hours: 3.00. This course will explore political, economic and social aspects of relations between the United States and various Latin American nations from independence to the present. Typically offered Summer Fall Spring.

### **LAS 34000 - Latin American Population Issues**

Credit Hours: 3.00. Explores demographic changes and migration trends relating to Latin America. Topics addressed will include internal and external migration, birth rates and international population policy. Typically offered Summer Fall Spring.

### **LAS 37300 - The Caribbean**

Credit Hours: 3.00. Will explore various topics and issues unique to the Caribbean. Emphasis will be placed on European and African influence on the complex nature of Caribbean history, languages and literature, societies and

cultures. Students may take the course for credit in either Latin American Studies or History, but not both. Typically offered Summer Fall Spring.

### **LAS 37600 - Latin American Cinema**

Credit Hours: 3.00. A study of films produced in Latin America or addressing Latin American topics/issues. Students will engage in critical analysis of the films, and expect to develop greater understanding of the social context of subjects introduced. May include documentaries or feature films. Approximately two hours each week will be devoted to viewing films, and two hours to class lecture/discussion. Typically offered Summer Fall Spring.

### **LAS 37700 - Latino/Hispanic Cinema**

Credit Hours: 3.00. A study of films produced by Hispanic-Americans and/or depicting the Hispanic American experience. Students will engage in critical analysis of the films, and expect to develop greater understanding of the social context of subjects introduced. May include documentaries or feature films. Approximately two hours each week will be devoted to viewing films, and two hours to class lecture/discussion. Typically offered Summer Fall Spring.

### **LAS 39000 - Latin American Themes Of Culture, Politics And Economy**

Credit Hours: 3.00. Topics addressed will include general themes of culture and political economy in Latin America. Typically offered Summer Fall Spring.

### **LAS 45000 - Hispanic Heritage At The Calumet Region**

Credit Hours: 3.00. An exploration of the history of Hispanic immigration into the Calumet Region. The course will include an examination of cultural diversity, politics, community organizations, and contributions of local Hispanic-Americans. Typically offered Summer Fall Spring.

### **LAS 47200 - History Of Mexico**

Credit Hours: 3.00. A history of the Mexican people from the pre-Columbian period to the present. Special emphasis is placed on the successful social revolutions that led to the development of today's dynamic nation. Typically offered Fall Spring Summer.

### **LAS 48000 - Practicum In Latin American Studies**

Credit Hours: 1.00 to 3.00. This course is designed to offer students credit for field experience in Latin American studies. Work may include study abroad, community service, or research. Typically offered Summer Fall Spring.

### **LAS 49000 - Topics In Latin American Studies**

Credit Hours: 3.00. Special topics course designed to address various subjects. Typically offered Summer Fall Spring.

## **Lithuanian**

### **LTHN 10100 - Lithuanian Level I**

Credit Hours: 3.00. Introduction to basic skills in the language. Typically offered Summer Fall Spring.

### **LTHN 10200 - Lithuanian Level II**

**Prerequisite(s):** LTHN 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Continuation of Lithuanian 101. Typically offered Summer Fall Spring.

## **Management**

### **MGMT 20000 - Introductory Accounting**

Credit Hours: 3.00. The objectives of the course are to help students: (1) understand what is in financial statements and what the statements say about a business, (2) identify the business activities that caused the amounts that appear in the statements, and (3) understand how, when, and at what amount the effects of manager and employee actions will appear in the statements. Typically offered Fall Spring Summer.CTL:IPO 1801 Accounting I

### **MGMT 20100 - Management Accounting I**

**Prerequisite(s):** MGMT 20000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An introduction to management's internal use of accounting information--for decision making, production management, product costing, motivating and evaluating performance, and budgeting. Typically offered Fall Spring Summer.CCN:IPO 1802 Accounting II

### **MGMT 25400 - Legal Foundations Of Business I**

Credit Hours: 3.00. An examination and study, for management students, of the nature and place of law in our society, both national and international, the social and moral bases of law enactment, regulation of business, legal liability, enforcement procedures, and the legal environment for managers. Typically offered Fall Spring Summer.

### **MGMT 32300 - Principles Of Marketing**

Credit Hours: 3.00. This mixed lecture and case course provides an overview of the functional area of marketing. The course is taught from a managerial perspective; it focuses on inputs to the marketing decision-making process, the process itself, and its results. No credit for students in the School of Management, except economics majors. Typically offered Fall Spring.

### **MGMT 44500 - Introduction To Investments And Portfolio Management**

**Prerequisite(s):** ECON 25100 FOR LEVEL UG WITH MIN. GRADE OF C AND ECON 25200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Introduction to investments and portfolio management for non-management students. Covers characteristics of stock, bonds, portfolios, and financial markets. Includes introduction to interest rates and time value of money. Typically offered Fall Spring Summer.

### **MGMT 45500 - Legal Background For Business I**

Credit Hours: 3.00. The nature and place of law in our society, national and international, social and moral bases of law enactment, regulation of business, legal liability, and enforcement procedures. Special emphasis on torts, contracts, and agency. No credit to students in the School of Management. Typically offered Fall Spring Summer.

### **MGMT 50010 - Foundations Of Financial Accounting**

Credit Hours: 1.00 to 2.00. The primary objective of this course is to provide a broad overview of financial accounting. The four basic financial statements are discussed which include balance sheet, income statement, statement of retained earnings, and statement of cash flows. The components that make up each statement will also be covered to include assets, liabilities, owner's equity, revenue and expenses. Upon completion of this course, students will have an understanding of the fundamental accounting concepts and how financial information is used by various internal and external decision makers. Typically offered Fall Spring Summer.

### **MGMT 50100 - Advanced Taxation**

**Prerequisite(s):** MGMT 40400 FOR LEVEL UG WITH MIN. GRADE OF B

Credit Hours: 3.00. An advanced course in federal income taxation, with an in-depth study of corporations and partnerships. Additional topics will include professional responsibility, tax planning, and basic tax research. Typically offered Fall.

### **MGMT 50300 - Advanced Accounting**

**Prerequisite(s):** MGMT 35100 FOR LEVEL UG WITH MIN. GRADE OF B

Credit Hours: 3.00. Advanced course in financial accounting. A range of contemporary issues in financial reporting, such as business combinations, investments, consolidations, inflation, multinationals, and tax allocation are covered. Both technical proficiency and user applications are emphasized. Typically offered Fall Spring.

### **MGMT 50400 - Tax Accounting**

**Prerequisite(s):** MGMT 35000 FOR LEVEL UG WITH MIN. GRADE OF B

Credit Hours: 3.00. Basic tax course designed to provide an understanding of the various federal taxes, including income, gift, estate, excise, federal insurance contribution, self-employment, and unemployment taxes. Typically offered Fall Spring.

### **MGMT 50500 - Management Accounting II**

**Prerequisite(s):** MGMT 31000 FOR LEVEL UG WITH MIN. GRADE OF B AND MGMT 35100 FOR LEVEL UG WITH MIN. GRADE OF B

Credit Hours: 3.00. The focus of the course is managerial decision making and the economic role of information. Topics covered include decentralized financial performance evaluation, cost analysis, and financial planning and control systems. Typically offered Fall.

### **MGMT 50600 - Auditing**

**Prerequisite(s):** MGMT 35100 FOR LEVEL UG WITH MIN. GRADE OF B (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. A study of the concepts and procedures of auditing, which is the systematic process of objectively obtaining and evaluating evidence regarding assertions about economic actions and events. Primary emphasis is on audits conducted by independent certified public accountants, but topics covered apply to internal auditing as well. Typically offered Spring.

### **MGMT 50700 - Advanced Federal Income Taxes**

**Prerequisite(s):** MGMT 50400 FOR LEVEL UG WITH MIN. GRADE OF B

Credit Hours: 3.00. Advanced course in federal income taxes, with a brief study of gift and estate taxes. Some issues covered in MGMT 50400 are studied in more depth, particularly taxation of corporations and partnerships. The course, which is taught in seminar format, gives the student considerable practice in doing tax research and reporting conclusions. It is especially appropriate for the student entering a career in a tax environment. Typically offered Spring.

### **MGMT 50800 - Accounting For Non-Profit Organizations**

**Prerequisite(s):** MGMT 35100 FOR LEVEL UG WITH MIN. GRADE OF B

Credit Hours: 3.00. An accounting course for non-profit organizations. Topics include accounting for non-profit hospitals, colleges, and universities, federal governmental accounting, and auditing concepts for governmental entities. Also covered is analysis of not-for-profit and governmental financial statements. Typically offered Fall Spring.

### **MGMT 50900 - International Accounting**

**Prerequisite(s):** MGMT 35100 FOR LEVEL UG WITH MIN. GRADE OF B

Credit Hours: 3.00. Provides insight into and an understanding of the many accounting problems and issues faced in an international business environment. The material is approached from two compatible and overlapping perspectives: the perspective of accounting or financial management in a U.S. multinational corporation and the perspective of an investor interested in understanding the international business environment. Typically offered Fall Spring.

### **MGMT 51200 - Financial Institutions And Markets**

**Prerequisite(s):** MGMT 31000 FOR LEVEL UG WITH MIN. GRADE OF B OR MGMT 61000 FOR LEVEL GR WITH MIN. GRADE OF B OR MGMT 61100 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 3.00. Analysis of management policy of financial institutions, including liquidity management, liability management, asset management, and capital management; description of the legal, economic, and regulatory environments and their implications for management. Emphasis on commercial bank management. Not open to students with credit in MGMT 41200. Typically offered Fall Spring Summer.

### **MGMT 51500 - Fraud Investigation**

**Prerequisite(s):** MGMT 60000 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 3.00. Develops an understanding of how and why occupational fraud occurs. This course focuses upon how fraudulent conduct may be deterred and how allegations of fraud should be investigated. Typically offered Fall Spring Summer.

### **MGMT 51600 - Investment Management**

**Prerequisite(s):** MGMT 31000 FOR LEVEL UG WITH MIN. GRADE OF B OR MGMT 61000 FOR LEVEL GR WITH MIN. GRADE OF B OR MGMT 61100 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 3.00. Treatment of problems of portfolio analysis, capital markets, and securities investment selection. Theoretical development and practical applications at the level of the individual decision maker. Not open to students with credit in MGMT 44500. Typically offered Fall Spring Summer.

### **MGMT 51700 - Fraud Data Analysis**

**Prerequisite(s):** MGMT 60000 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 3.00. Develops an understanding of various aspects of IT auditing and fraud data analysis. This course covers the IT audit process to identify sources of fraud and to identify risks associated with information technology assurance. Typically offered Fall Spring Summer.

### **MGMT 51800 - Criminology And Legal Issues**

**Prerequisite(s):** MGMT 60000 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 3.00. Focuses on the topics of psychological and sociological theories of behavior as they relate to white collar crime. Develops an understanding of techniques and legal procedures associated with interviewing individuals associated with cases to support investigations. Typically offered Fall Spring Summer.

### **MGMT 51900 - Advanced Fraud Investigation**

**Prerequisite(s):** MGMT 60000 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 3.00. A capstone course in Fraud Investigation. The course covers major fraud case investigation, with an emphasis on forensic and litigation support aspects. Typically offered Fall Spring Summer.

### **MGMT 52010 - Foundations Of Marketing**

Credit Hours: 1.00 to 2.00. The objectives of this course are to expose students to the problems commonly found by marketing managers and develop skills in analyzing marketing problems and prepare implementable plans of action based on the analyses of the given business situations. Marketing decision-making will explore the product, price, promotion, and distribution of ideas, goods, and services to create exchanges that satisfy individual and organizational objectives. Typically offered Fall Spring Summer.

### **MGMT 52600 - Commercial Law**

Credit Hours: 3.00. Focuses primarily on the law of ownership, forms of business organizations, the uniform commercial code as it relates to sales, commercial paper and secured transactions, governmental regulation of business, and accountant's liability. Permission of instructor required. Typically offered Fall Spring Summer.

### **MGMT 52700 - Accounting Theory**

Credit Hours: 3.00. Important accounting constructs (such as assets, liabilities, cost) are defined, and measurement issues are discussed. Generally accepted accounting principle concepts, principles, and assumptions are examined. The value of information via an examination of various theories of information and decision making, including psychological theories and theories of ethical decision making are considered. Permission of instructor required. Typically offered Fall Spring Summer.

### **MGMT 53010 - Foundations Of Business Law**

Credit Hours: 1.00 to 2.00. A review of the operation of our legal system and its significance in managerial decision making. Topics may include: legal heritage, courts and jurisdiction, liability, contracts, forms of business organization and investor protections, negotiable instruments and Uniform Commercial Code. Typically offered Fall Spring Summer.

### **MGMT 53400 - Accounting Practice**

**Prerequisite(s):** MGMT 35100 FOR LEVEL UG WITH MIN. GRADE OF B AND MGMT 40400 FOR LEVEL UG WITH MIN. GRADE OF B AND MGMT 40600 FOR LEVEL UG WITH MIN. GRADE OF B AND MGMT 40700 FOR LEVEL UG WITH MIN. GRADE OF B

Credit Hours: 4.00. Presents a view of the various accounting, legal, and regulatory subjects expected to be tested on the uniform CPA exam. Topics covered include financial accounting and reporting, auditing, business environment and concepts, and business regulation. Typically offered Summer Fall Spring.

### **MGMT 54400 - Database Management Systems**

**Prerequisite(s):** MGMT 29000 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. Covers the theory and practice of database design and usage. Students will learn the importance of data modeling concepts and how to use these effectively and how to plan and design a database, including issues such as data security and control. The following course is recommended: MGMT 29000 Programming for Business Applications or CS 15900 or CS 17700 or CNIT 17500, all with a C- or higher. Typically offered Fall Spring.

### **MGMT 54600 - Decision Support And Expert Systems**

Credit Hours: 3.00. Since a large percentage of societal and management problems can be characterized as relatively unstructured, this course explores how computers can be used to aid decision makers in dealing with unstructured, as well as structured, problems. Appropriate material from knowledge representation, artificial intelligence, and language theory is considered. Applications selected from environmental management and strategic planning in large organizations are used to illustrate theoretical ideas. Since the key computer software tool is database management, a development of the CODASYL approach to data management is presented. Typically offered Fall.

### **MGMT 55100 - Unified Modeling Language**

Credit Hours: 3.00. An introduction to Unified Modeling Language (UML) modeling and major UML diagrams and how to apply them within object-oriented (OO) environments. Topics include UML basics, OO system analysis and design, development process, and UML diagrams. Permission of instructor required. Typically offered Fall Spring Summer.

### **MGMT 58010 - Foundations Of Information Technology**

Credit Hours: 1.00 to 2.00. An overview of the use of Information Systems in the modern, global corporate environment. Students will be introduced to software such as spreadsheets and data bases that will be utilized in subsequent courses in the MBA program. The ultimate goal is to bring all students up to the level of technological competency they need to succeed in this program. Typically offered Fall Spring Summer.

### **MGMT 59000 - Directed Readings In Management**

Credit Hours: 1.00 to 4.00 (West Lafayette, North Central) 2.00 to 4.00 (Calumet) Supervised reading and reports in various subjects. Open only to a limited number of seniors and graduate students. . Permission of instructor required. Typically offered Fall Spring Summer.

### **MGMT 60000 - Accounting For Managers**

Credit Hours: 2.00 or 3.00 (West Lafayette) 3.00 (Calumet, North Central) The two-course accounting sequence employs a user's perspective on the firm's database. First, the standard accounting model is developed into a working tool, as no prior study of accounting is assumed. Then illustrative business cases are discussed to show how external reports conform to financial contracts and public regulation. Public reports primarily directed to investors and creditors are analyzed to reconstruct the economic events and managerial decisions underlying generally accepted accounting standards. Prerequisite: Masters student standing and Management majors only. Typically offered Fall.

### **MGMT 60100 - Managerial Accounting**

**Prerequisite(s):** MGMT 60000 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 2.00 to 4.00 (West Lafayette) 3.00 (North Central) Oriented to managers, the course examines the firm's internal systems for costing products or services and their interpretation. A variety of manufacturing and service industries are studied to demonstrate design of flexible cost systems to match the firm's technological, competitive

and/or multinational environments. Applications to budgeting, variance analysis, pricing models, performance evaluation and incentives are demonstrated. Case discussion and analytical "what if" modes of instruction are used to enhance managerial skills of students. Design and use of accounting data are linked to other subjects in the program core and to ethical aspects of accounting policy issues. Prerequisite: MGMT 60000. Typically offered Fall Spring Summer.

### **MGMT 60600 - Seminar In External Reporting I**

Credit Hours: 2.00 to 4.00. Seminar examines research issues on the production, dissemination, and use of financial accounting information for economic decisions by external users. The materials covered are primarily empirically oriented. The aim is to expose students to these issues as they are covered in the accounting and related literature. Prerequisite: ECON 60000. Typically offered Spring.

### **MGMT 60800 - Selected Research Topics In Accounting**

Credit Hours: 2.00 to 4.00. (West Lafayette, North Central) Credit Hours: 3.00. (Calumet) Individual and group study of current research problems in accounting. A limited set of problem areas will be covered in any one offering. Emphasis will be placed on current substantive problems and the research methods employed. Prerequisite: MGMT 60100. Typically offered Fall.

### **MGMT 61100 - Advanced Corporate Finance**

Credit Hours: 2.00 to 4.00 (West Lafayette, Calumet) 3.00 (North Central) Long-term capital structure planning, capital budgeting, treatment of uncertainty in investment decisions, security underwriting, dividend policies, and mergers. Prerequisite: MGMT 61000. Typically offered Fall Spring Summer.

### **MGMT 61200 - Financial Management III**

**Prerequisite(s):** MGMT 61100 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 2.00 to 4.00 (West Lafayette) 3.00 (Calumet, North Central) Further treatment of topics in the financial management of nonfinancial corporations, from the viewpoint of the internal financial officer. Topics include further coverage of cost of capital and financial planning, as well as cash management, working capital management, short-term financing, advanced capital budgeting, and leasing. Emphasis on applications. Continuation of MGMT 611 with additional depth and topic coverage. Prerequisite: MGMT 61000. Typically offered Fall Spring.

### **MGMT 61400 - Investments**

Credit Hours: 2.00 to 4.00. Examination of the process of asset valuation. Emphasis on portfolio analysis, security selection, risk-return relationships, and performance evaluation. Additional topics considered include security analysis, option pricing and analysis, futures contracts, and security market operations. Typically offered Spring Fall.

### **MGMT 61500 - International Financial Management**

Credit Hours: 2.00 to 4.00 (West Lafayette) 3.00 (Calumet) Integrative course dealing with the management of firms doing business internationally. Emphasis on decision making. Will draw upon, and adapt, managerial decision models developed for domestic operations, as well as cover appropriate international institutional material. Particular focus on finance and strategic management. Prerequisites: ECON 51500. Typically offered Fall Spring.

### **MGMT 62000 - Marketing Management**

Credit Hours: 2.00. to 4.00 (West Lafayette and Calumet) 3.00 (North Central) An integrated analysis of major marketing decisions, including product pricing, advertising, distribution, and sales force policies. Prerequisite: Master's student standing and Management majors only. Typically offered Fall Spring.

### **MGMT 62200 - Marketing Strategy**

**Prerequisite(s):** MGMT 62000 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 2.00 to 4.00 (West Lafayette) 3.00 or 4.00 (Calumet) 3.00 (North Central) Key aspects of marketing strategy formulation and implementation are covered, including customer needs assessment, targeting, and positioning strategies in a competitive market. A managerial perspective allows development of decision-making skills necessary for successful marketing strategies. Prerequisite: MGMT 62000, 62100. Typically offered Fall Spring Summer.

### **MGMT 62500 - Marketing Research**

Credit Hours: 2.00 to 4.00 (West Lafayette) 3.00 (Calumet) Application of statistical and other quantitative concepts to marketing management problems. Prerequisite: MGMT 67000. Typically offered Fall Spring Summer.

### **MGMT 63000 - Legal And Social Foundations Of Management**

Credit Hours: 2.00 to 4.00 (West Lafayette) 3.00 (Calumet, North Central) An examination of the nature of the legal environment from the viewpoint of the social and moral bases of law. Emphasis is given to the operation of our legal system and its significance in decision functions of management. Prerequisite: Master's student standing and Management majors only. Typically offered Spring Summer Fall.

### **MGMT 63700 - Marketing Communications**

**Prerequisite(s):** MGMT 62000 FOR LEVEL GR WITH MIN. GRADE OF D- AND MGMT 62200 FOR LEVEL GR WITH MIN. GRADE OF D-

Credit Hours: 2.00 or 3.00. Familiarizes students with two critical means of marketing communications: advertising



and sales promotion. Provides knowledge that will help students make effective marketing communications decisions, either as a brand/product manager, advertising agency executive, or sales manager. Prerequisite: MGMT 62000, 62200. Typically offered Fall Spring Summer.

### **MGMT 65000 - Strategic Management I**

**Prerequisite(s):** MGMT 61200 FOR LEVEL GR WITH MIN. GRADE OF B AND MGMT 62200 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 2.00 to 4.00. Concepts and methods that integrate previous training in functional areas of management. The perspective is that of the general manager charged with directing the total enterprise. Emphasis is given to formulation and implementation of strategy. Prerequisite: MGMT 61000, 62000, Master's student standing and Management majors only. Typically offered Fall Spring Summer.

### **MGMT 65500 - Competitive Strategy**

**Prerequisite(s):** MGMT 65000 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 2.00 or 3.00. Examines how firms obtain and sustain superior returns through the development and implementation of a competitive strategy at the business-unit level. Focus is on strategies that develop and exploit two sources of superior returns: unique value-creating resources (e.g., patents, brand equity, operational capabilities), and powerful positions in markets and supply chains. Participants are expected to be familiar with basic competitive strategy concepts and tools, such as five-forces analysis, the value chain, and generic strategies. Presents a more analytical perspective of strategy, drawing from game theory. Prerequisites: MGMT 65000. Typically offered Fall Spring Summer.

### **MGMT 66000 - Introduction To Operations Management**

**Prerequisite(s):** MGMT 61100 FOR LEVEL GR WITH MIN. GRADE OF B AND MGMT 62000 FOR LEVEL GR WITH MIN. GRADE OF B AND MGMT 67000 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 2.00 to 4.00 (West Lafayette) 3.00 (Calumet, North Central) As goods and services are produced and distributed, they move through a set of inter-related operations or processes in order to match supply with demand. The design of these operations for strategic advantage, investment in improving their efficiency and effectiveness, and controlling these operations to meet performance objectives is the domain of Operations Management. The primary objective of the course is to provide an overview of this important functional area of business. Prerequisite: MGMT 67000, 67100. Typically offered Fall Spring Summer.

### **MGMT 67000 - Business Analytics**

Credit Hours: 2.00 to 4.00. Introduction to quantitative decision procedures under uncertainty. Applications of descriptive statistics, probability models, simulation models, interval estimates, and hypothesis testing to management problems. Managerial-oriented cases are used in instruction. Prerequisite: Master's student standing and Management majors only. Typically offered Fall.

### **MGMT 67100 - Quantitative Methods II**

**Prerequisite(s):** MGMT 67000 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 2.00 (West Lafayette) 3.00 (Calumet, North Central). A continuation of Quantitative Methods I. Applications of regression procedure, forecasting technique, and statistical design of experiment method to management problems. Managerial-oriented cases are used throughout the course. Prerequisite: MGMT 67000. Typically offered Fall.

### **MGMT 67200 - Advanced Business Analytics**

Credit Hours: 2.00. Quantitative decision procedures under uncertainty applied to business problems. Basic concepts in econometrics and multivariate analysis are studied. Several managerial-oriented case studies are used to illustrate estimation, testing, and regression procedures. Prerequisite: MGMT 67100, Master's student standing and Management majors only. Typically offered Summer Spring.

### **MGMT 68000 - Introduction To Information Technology**

Credit Hours: 2.00 (West Lafayette) 3.00 (Calumet, North Central) An introduction to the capabilities, limitations, and applications of computers to the business environment. Addresses issues relating to computer hardware and software, data management, problem analysis, and other management information systems (MIS) topics. Students use the computer as programmers, as users of existing software systems, and in the role of managers within business decision-making contexts. Concurrent Prerequisite: MGMT 67000 or 67300. Typically offered Fall Spring Summer.

### **MGMT 68300 - Information Technology for Innovations and Competitive Advantage**

Credit Hours: 2.00. The important technological issues of computing are presented. The emphasis is on the impact of technology on the organization. Topics include problem organization and complexity, database management, operating systems, data communications, and privacy. Research projects on an assigned topic provide greater depth of coverage of certain topics. Typically offered Summer Spring.

### **MGMT 68301 - Management Information Systems**

Credit Hours: 2.00. The important technological issues of computing are presented. The emphasis is on the impact of technology on the organization. Topics include problem organization and complexity, database management, operating systems, data communications, and privacy. Research projects on an assigned topic provide greater depth of coverage of certain topics. Typically offered Fall Spring Summer.

### **MGMT 68500 - Enterprise Integration**

**Prerequisite(s):** MGMT 68000 FOR LEVEL GR WITH MIN. GRADE OF B- OR MGMT 68300 FOR LEVEL GR WITH MIN. GRADE OF B-

Credit Hours: 2.00 or 3.00. Investigates the issues and requirements of enterprise integration; specifically, the issues related to information delivery services to enable cross-functional integration within a distributed computing environment. Typically offered Fall Spring.

### **MGMT 69000 - Advanced Problems In Management**

Credit Hours: 1.00 to 4.00. Advanced investigation in a specific management field at the graduate level. Typically offered Fall Spring Summer.

## **Management Information Systems**

### **MIS 30100 - Systems Analysis And Design**

**Prerequisite(s):** CNIT 10700 FOR LEVEL UG WITH MIN. GRADE OF D- AND GBG 12700 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The functions and components of database management systems and the role of databases in the Systems Development Life Cycle is the focus of this course. Database Management Systems are explored in general, with special emphasis on relational databases. Data modeling tools presented include enterprise models, entity relationship diagrams (ERDs), the data dictionary, object diagrams, and normalization techniques. Given user requirements, students will design, construct, and test a database-driven information system. Basic and advanced data queries are developed using a contemporary database management system. Typically offered Fall.

### **MIS 30500 - Database Analysis And Design**

**Prerequisite(s):** MIS 30100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A study of the procedural requirements of the systems development life cycle (SDLC). A case study approach introduces the student to the techniques of systems planning, design, documentation, implementation, and evaluation. Topics include requirements modeling, data and process modeling, and development strategies. Students will also learn about output and user interface design, data design, systems architecture and implementation, systems operation, support and security. Typically offered Fall Spring Summer.

### **MIS 31000 - Project Management**

**Prerequisite(s):** MIS 30500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course utilizes a holistic approach to introduce a strategic, system perspective on the management of projects. Its focus is on managing projects within an organizational context, including the processes related to initiating, planning, organizing, scheduling and controlling projects. Course topics include project definition and execution, risk assessment, estimating, planning, human factors and standard methods. Students gain practical experience using project management techniques, including software tools. Case studies, personal experience and real-world projects will be used to demonstrate tools and techniques. Typically offered Fall Spring Summer.

### **MIS 31500 - Network And Telecommunications Management**

**Prerequisite(s):** MIS 31000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course provides an in-depth study of the communication systems that enable businesses to survive in today's intensive business atmosphere. Fundamentals of telecommunication networks, network architectures, network protocols, telecommunication equipment, telecommunication capabilities and current technologies in use in telecommunication networks are discussed. Students will learn how to plan, implement and manage a business network. Emerging technologies will be discussed so that students can make informed decisions about corporate telecommunication systems. Typically offered Fall Spring Summer.

### **MIS 32000 - Managing Electronic Commerce**

**Prerequisite(s):** MIS 31000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course focuses on how Information Technology (IT) is changing the design and operations of organizations in the global economy. Traditional commerce is compared to e-commerce and the impact this has on the organization is explored. Business strategies and technologies as they apply to e-commerce are covered. Case studies as well as classroom discussion is used to explore the strategic, operational and technical issues associated with global electronic commerce. Typically offered Fall Spring Summer.

## **Manufacturing Engineering Technology**

### **MFET 24300 - Automated Manufacturing I**

Credit Hours: 3.00. The application of industrial control components (relays, motor starters, etc.) and programmable logic controllers (PLCs) in both discrete and continuous automated manufacturing environments. The theory of operation and selection of common industrial control components is explored. Students learn to design, program, and troubleshoot PLC systems. An introduction to closed loop control systems is included. Typically offered Spring Fall.

### **MFET 24400 - Automated Manufacturing II**

Credit Hours: 3.00. Shop floor components of computer-integrated manufacturing are introduced. Emphasis is focused on current applications and programming practices of various computer automated manufacturing processes and technologies. Topics include: CAD/CAM integration, computer-assisted numerical control programming, computer-assisted quality control, and automatic identification. Typically offered Fall Spring Summer.

### **MFET 40000 - Computer Integrated Manufacturing**

Credit Hours: 3.00. This course will study the technology associated with computer integrated manufacturing (CIM). Conventional manufacturing technologies and methods will be introduced, followed by computer automation and CIM. The course will include computer-aided design (CAD), automated manufacturing processes, integrated manufacturing processes, integrated manufacturing systems, and other related topics. Does not carry credit toward graduation in MET/CIMT. Typically offered Spring Fall Summer.

### **MFET 47400 - Manufacturing Integration II**

Credit Hours: 3.00. Examination of sensors, data acquisition systems, and the fundamentals of control system technology and theory of operation, including common industrial sensors. Interfacing of various sensors to data acquisition systems and collection and monitoring of process data using data acquisition systems. Open loop and closed loop control system fundamentals are addressed. Typically offered Fall Spring Summer.

## **Marketing**

### **MKG 22100 - Principles Of Advertising**

Credit Hours: 3.00. An analysis of commercial persuasion from colonial times to the era of mass communication. The course examines the structure of advertising messages, how they are adapted to specific audiences, and the social settings in which they occur. Typically offered Summer Fall Spring.

### **MKG 22400 - Principles Of Marketing**

**Prerequisite(s):** ECON 25100 FOR LEVEL UG WITH MIN. GRADE OF C AND ECON 25200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An introduction to the principles and concepts underlying marketing decisions. The topics covered include distribution channels, pricing, promotion, product, consumer behavior, and environmental influences on marketing. Typically offered Fall Spring Summer.

### **MKG 32400 - Marketing Management**

Credit Hours: 3.00. The objectives of this course are to expose students to the problems commonly faced by marketing managers and to develop skills in analyzing marketing problems and preparing implementable plans of action based on analyses of given business situations. Cases and a marketing simulation are used to focus the discussion and to reinforce learning of key marketing concepts. Typically offered Summer Fall Spring.

### **MKG 39000 - Special Topics: Marketing**

Credit Hours: 1.00 to 3.00. Individual participation, supervised reading, laboratory or field experiments, or research in special areas of general business marketing field. Permission of instructor required. Typically offered Fall Spring Summer.

### **MKG 42000 - Digital Marketing Campaigns**

**Prerequisite(s):** MKG 22400 FOR LEVEL UG WITH MIN. GRADE OF C OR GBM 32900 FOR LEVEL UG WITH MIN. GRADE OF C OR MGMT 32300 FOR LEVEL UG WITH MIN. GRADE OF C OR BA 22400 FOR LEVEL UG WITH MIN. GRADE OF C OR MKG 32400 FOR LEVEL UG WITH MIN. GRADE OF C OR MGMT 32400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Digital Marketing Campaigns focuses on the preparation of a measurable direct/interactive marketing campaign for a real-world corporate client. Students perform research, formulate strategic conclusions, develop a digital theme, design the creative, outline the media plans, and establish evaluation for the campaign. Finalized campaigns are then shared with the real-world client for review. Typically offered Fall Spring Summer.

### **MKG 42100 - Integrated Marketing Communications**

**Prerequisite(s):** MGMT 32400 FOR LEVEL UG WITH MIN. GRADE OF C OR MKG 32400 FOR LEVEL UG WITH MIN. GRADE OF C OR MGMT 22400 FOR LEVEL UG WITH MIN. GRADE OF C OR MKG 22400 FOR LEVEL UG WITH MIN. GRADE OF C OR GBM 32900 FOR LEVEL UG WITH MIN. GRADE OF C OR BA 22400 FOR LEVEL UG WITH MIN. GRADE OF C OR MGMT 32300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course integrates advertising, public relations, publicity, personal selling and sales promotion as the overall promotional mix. Various communication methods and tools are treated as variables for use alone or in combination to communicate attributes of products and services to the customer. Typically offered Fall Spring Summer.

### **MKG 42200 - International Marketing**

**Prerequisite(s):** MGMT 32400 FOR LEVEL UG WITH MIN. GRADE OF C OR MKG 32400 FOR LEVEL UG WITH MIN. GRADE OF C OR MGMT 22400 FOR LEVEL UG WITH MIN. GRADE OF C OR MKG 22400 FOR LEVEL UG WITH MIN. GRADE OF C OR GBM 32900 FOR LEVEL UG WITH MIN. GRADE OF C OR BA 22400 FOR LEVEL UG WITH MIN. GRADE OF C OR MGMT 32300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course explores the opportunities in global markets and examines the challenges of global marketing. Emphasis is placed on the strategic implications of competition in the markets of various countries. Typically offered Fall Spring Summer.

### **MKG 42400 - Consumer Behavior**

**Prerequisite(s):** MGMT 32400 FOR LEVEL UG WITH MIN. GRADE OF C OR MKG 32400 FOR LEVEL UG WITH MIN. GRADE OF C OR MGMT 22400 FOR LEVEL UG WITH MIN. GRADE OF C OR MKG 22400 FOR LEVEL UG WITH MIN. GRADE OF C OR GBM 32900 FOR LEVEL UG WITH MIN. GRADE OF C OR BA 22400 FOR LEVEL UG WITH MIN. GRADE OF C OR MGMT 32300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An analysis of the environmental, social and psychological factors which influence an individual's buying decisions. The course covers how individual consumers are identified, motivated, and evaluated for use in various marketing activities. Emphasis is placed on the business approach for identifying the consumer's decision-making process. Typically offered Fall Spring Summer.

### **MKG 42500 - Marketing Research**

**Prerequisite(s):** (MKG 22400 FOR LEVEL UG WITH MIN. GRADE OF C OR GBM 32900 FOR LEVEL UG WITH MIN. GRADE OF C OR MGMT 32300 FOR LEVEL UG WITH MIN. GRADE OF C OR MKG 32400 FOR LEVEL UG WITH MIN. GRADE OF C) AND (BUSM 22500 FOR LEVEL UG WITH MIN. GRADE OF C OR STAT 30100 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 3.00. The purpose of this course is to develop skills in the planning and execution of market research studies designed to acquire useful information for marketing decisions. It aims to familiarize students with techniques of research design, data collection, and analysis. Emphasis is placed on evaluating the results obtained from such investigations. Typically offered Fall Spring.

### **MKG 42600 - Marketing Channels**

**Prerequisite(s):** MGMT 32400 FOR LEVEL UG WITH MIN. GRADE OF C OR MKG 32400 FOR LEVEL UG WITH MIN. GRADE OF C OR MGMT 22400 FOR LEVEL UG WITH MIN. GRADE OF C OR BA 22400 FOR LEVEL UG WITH MIN. GRADE OF C OR MKG 22400 FOR LEVEL UG WITH MIN. GRADE OF C OR GBM 32900 FOR LEVEL UG WITH MIN. GRADE OF C OR MGMT 32300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Functions of a retail establishment are examined. The topics covered include retail operations planning; buyer behavior, store design, location, and layout; organizing and staffing the retail firm; merchandise management; pricing concepts and strategies; promotion; credit; financial management; and a discussion of the future of retailing. Emphasis is given to significant developments taking place in the major environments of retailing to include social, economic, technological, and legal aspects. Typically offered Fall Spring Summer.

### **MKG 42700 - Sales Management**

**Prerequisite(s):** MKG 43300 FOR LEVEL UG WITH MIN. GRADE OF C OR GBM 38000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Organization, management, and operation of the sales force. Examines the recruitment, selection, and processing of the sales force; motivation; forecasting; sales department budgeting; and performance evaluation. Emphasis is given to the management of an outside sales force and its activities. Typically offered Fall Spring Summer.

### **MKG 42800 - Advertising Management**

**Prerequisite(s):** MKG 22400 FOR LEVEL UG WITH MIN. GRADE OF C OR GBM 32900 FOR LEVEL UG WITH MIN. GRADE OF C OR MKG 32400 FOR LEVEL UG WITH MIN. GRADE OF C OR MGMT 32300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course provides an understanding and evaluation of the advertising function within the modern business environment. The course covers history, advertising and the promotional mix, and advertising as a vital communication tool. Typically offered Fall Spring Summer.

### **MKG 42900 - Advertising Campaigns II**

**Prerequisite(s):** MKG 43000 FOR LEVEL UG WITH MIN. GRADE OF C OR GBM 38100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Emphasizes the preparation of a complete advertising campaign for a business or non-profit organization. The student will be able to integrate marketing research and segmentation, media, and promotion plans, strategy, creative, and presentation in a unified campaign to serve a local or national organization. Typically offered Fall Spring Summer.

### **MKG 43000 - Advertising Campaigns I**

**Prerequisite(s):** (MKG 22400 FOR LEVEL UG WITH MIN. GRADE OF C OR GBM 32900 FOR LEVEL UG WITH MIN. GRADE OF C OR MGMT 32300 FOR LEVEL UG WITH MIN. GRADE OF C OR MKG 32400 FOR LEVEL UG WITH MIN. GRADE OF C) AND (MKG 42400 FOR LEVEL UG WITH MIN. GRADE OF C OR GBM 38500 FOR LEVEL UG WITH MIN. GRADE OF ) AND (MKG 42500 FOR LEVEL UG WITH MIN. GRADE OF C OR GBM 32500 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 3.00. Emphasis on the management of marketing research, segmentation, analysis and campaign strategy for a business or non-profit organization as part of a local or national advertising campaign. Typically offered Fall Spring Summer.

### **MKG 43300 - Personal Selling**

**Prerequisite(s):** MKG 22400 FOR LEVEL UG WITH MIN. GRADE OF C OR GBM 32900 FOR LEVEL UG WITH MIN. GRADE OF C OR MKG 32400 FOR LEVEL UG WITH MIN. GRADE OF C OR HTM 23100 FOR LEVEL UG WITH MIN. GRADE OF C OR COM 25300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A detailed exposure to personal selling strategies and tactics. It examines effective selling in the consumer and industrial markets, including an analysis of consumers, motivation and communications, handling objections and closing techniques. The entire sales process is examined, with particular emphasis on relationship selling, planning and delivery of sales presentations, and trust-building techniques. The roles of professional salespeople within their organizations and economic systems are investigated, as are important dimensions of sales careers. Typically offered Summer Fall Spring.

### **MKG 43400 - Digital Marketing Strategy**

**Prerequisite(s):** MGMT 32400 FOR LEVEL UG WITH MIN. GRADE OF C OR MKG 32400 FOR LEVEL UG WITH MIN. GRADE OF C OR MGMT 22400 FOR LEVEL UG WITH MIN. GRADE OF C OR BA 22400 FOR LEVEL UG WITH MIN. GRADE OF C OR MKG 22400 FOR LEVEL UG WITH MIN. GRADE OF C OR MGMT 32300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An introduction to electronic marketing and the dynamics of Internet marketing. Typically offered Summer Fall Spring.

### **MKG 43500 - Services Marketing**

**Prerequisite(s):** MGMT 32400 FOR LEVEL UG WITH MIN. GRADE OF C OR MKG 32400 FOR LEVEL UG WITH MIN. GRADE OF C OR MGMT 22400 FOR LEVEL UG WITH MIN. GRADE OF C OR BA 22400 FOR LEVEL UG WITH MIN. GRADE OF C OR MKG 22400 FOR LEVEL UG WITH MIN. GRADE OF C OR MGMT 32300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Addresses the distinct needs and challenges of managing services and delivering quality service to customers. The primary focus of the course is on distinctive approaches to marketing strategy, both in its development and execution, for service organizations. This course also addresses the role of service in manufacturing businesses as the basis for attaining a sustained competitive advantage. Typically offered Fall Spring Summer.

### **MKG 47500 - Social Media Marketing And Branding**

**Prerequisite(s):** MKG 32400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.0. The course overviews the various uses and forms of social media, ranging from web-pages, forums, and blogs to social networking sites. Typically offered Fall Spring Summer.

### **MKG 48000 - Marketing Strategy**

**Prerequisite(s):** (MKG 22400 FOR LEVEL UG WITH MIN. GRADE OF C OR GBM 32900 FOR LEVEL UG WITH MIN. GRADE OF C OR MGMT 32300 FOR LEVEL UG WITH MIN. GRADE OF C OR MKG 32400 FOR LEVEL UG WITH MIN. GRADE OF C) AND (MKG 42400 FOR LEVEL UG WITH MIN. GRADE OF C OR GBM 38500 FOR LEVEL UG WITH MIN. GRADE OF C) AND (MKG 42500 FOR LEVEL UG WITH MIN. GRADE OF C OR GBM 32500 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 3.00. This course integrates marketing concepts and applications from previous marketing courses. The emphasis is on the formulation of marketing strategy from the perspective of a marketing manager. This course should be taken only in the last year by all marketing students. Typically offered Fall Spring Summer.

**MKG 48500 - Sports Marketing****Prerequisite(s):** MKG 32400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This seminar is designed to introduce students to the complex and diverse nature of sports marketing. A framework will be presented to help explain and organize the strategic sports marketing process. Students will explore not only major league/professional sports marketing, but also minor league, collegiate, and recreational levels of the field. The student will gain an appreciation for the growing popularity of women's sports and globalization of sports. Typically offered Fall Spring Summer.

**MKG 48800 - Advanced Selling****Prerequisite(s):** MKG 43300 FOR LEVEL UG WITH MIN. GRADE OF C OR GBM 38000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course deepens student knowledge and application of the sales process and builds upon the skills learned in the Personal Selling class. Students will hone their selling skills through research driven sales call preparation, complex sales role-plays, and engagement in real world sales calls.

**MKG 48900 - Marketing Seminar****Prerequisite(s):** MKG 43000 FOR LEVEL UG WITH MIN. GRADE OF C- OR GBM 38100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Integration of marketing courses to relevant marketing problems through the analysis of cases and use of marketing simulation. The course is expected to establish the basis for strategic marketing, planning, and the practice of marketing decision-making on a specialized topic using cases and outside readings. Typically offered Fall Spring Summer.

**MKG 49000 - Directed Study**

Credit Hours: 3.00. Special subjects for investigation and experiment according to individual student's interest and need. Permission of instructor required. Typically offered Fall Spring Summer.

**MKG 49500 - Internship In Marketing**

Credit Hours: 1.00 to 4.00. A special course in selected areas of management, designed to provide practical field experience under professional supervision in selected situations. Permission of Instructor required. Typically offered Fall Summer Spring.

**MKG 49900 - Undergraduate Research In Marketing**

Credit Hours: 3.00. Student will work with a faculty member on a research project in their major. They will contribute to ongoing research while learning current research techniques in management. During this process, the students will develop critical thinking and oral and written communication skills. Permission of Instructor required. Typically offered Fall Spring Summer.

**MKG 59000 - Directed Readings in Marketing**

Credit Hours: 3.00. Special subjects according to individual student's interest and need. Permission of instructor required. Typically offered Fall Spring Summer.

**Materials Engineering****MSE 20000 - Materials Science****Prerequisite(s):** CHM 11500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An introductory course designed to provide a basic background in the broad field of materials science. Emphasis placed on the chemical and physical principles underlying the utilization and behavior of metals, alloys ceramics, composites, and aggregates in engineering. Typically offered Spring.

**MSE 34400 - Materials In Engineering****Prerequisite(s):** MSE 20000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Introduction to the structure and mechanical and physical properties of engineering materials. Selection of metals, alloys, plastics, ceramics, and composites for engineering applications. Strengthening methods and environmental effects. Analysis of the failure of materials under load. Laboratory experiments include mechanical testing, metallography, thermal treatment, and failure analysis. Typically offered Fall.

**MSE 38500 - Nondestructive Testing****Prerequisite(s):** MSE 20000 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHYS 26100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Basic principles and common application of nondestructive testing methods. The laws of physics are used to evaluate mechanical and physical properties of materials. The NDT methods cover magnetic, penetrants, eddy current, ultrasonic, radiography, and specialized methods. Typically offered Fall Spring Summer.

## **MSE 59700 - Selected Topics In Materials Engineering**

Arrange Hours and Credit. Hours and credits to be arranged. Permission of instructor required. Typically offered Fall Spring Summer.

## **Mathematics**

### **MA 10000 - An Introduction To Mathematical Sciences**

Credit Hours: 1.00. This course is intended to: integrate freshman mathematics majors into the department; help them adjust to university life; assist them in developing their academic and intellectual capabilities; introduce them to contemporary issues in mathematics; provide an overview of the careers open to those with degrees in mathematics. This course must be taken as pass/no pass only. Credit by examination is not available for this course. Typically offered Summer Fall Spring.

### **MA 11100 - Algebra**

**Prerequisite(s):** (PASM FOR MIN. SCORE OF 111 OR M023 FOR MIN. SCORE OF 04 OR M023 FOR MIN. SCORE OF 03 OR M023 FOR MIN. SCORE OF 02) OR APPL FOR MIN. SCORE OF 035

Credit Hours: 3.00. This is an algebra review course for students not prepared for MA 15200, 15300, or 15900. Topics covered: real numbers, linear functions, solving linear equations and systems of linear equations, absolute value equations and inequalities, rational expressions, complex numbers, proportions, solving quadratic equations. Typically offered Fall Spring Summer.

### **MA 11500 - Intermediate Algebra**

**Prerequisite(s):** APPL FOR MIN. SCORE OF 035

Credit Hours: 3.00. The purpose of this course is to strengthen and expand student's basic algebraic skills and problem-solving capabilities and to prepare them for higher level mathematics courses. For the purposes of general education requirements, Math 115 is not a collegiate level mathematics course, and therefore cannot be used to satisfy the general education requirement for mathematics at Purdue University Calumet. Typically offered Summer Fall Spring.

### **MA 12301 - Mathematical Ideas**

Credit Hours: 3.00. This course is designed to expose students to a variety of topics that will both enrich and stimulate their interest in mathematics. Topics may include (but are not limited to): the Pigeonhole Principles, Numerical Patterns in Nature, Infinity, The Pythagorean Theorem, and Chaos & Fractals. Additional topics may include: Contortions of space, measuring uncertainty, and mathematical decision making. Typically offered Fall Spring Summer.

### **MA 13700 - Mathematics For Elementary Teachers I**

**Prerequisite(s):** MA 11100 FOR LEVEL UG WITH MIN. GRADE OF C OR MA 11500 FOR LEVEL UG WITH MIN. GRADE OF C OR APPL FOR MIN. SCORE OF 045

Credit Hours: 3.00. Designed for prospective elementary school teachers. Problem solving. Numerical reasoning including self-generated and conventional algorithms. Whole and fractional number systems, elementary number theory. (Not available for credit toward graduation in the College of Engineering and Sciences). Typically offered Fall Spring.

### **MA 13800 - Mathematics For Elementary Teachers II**

**Prerequisite(s):** MA 13700 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Continues the study of number systems through integers, rational numbers and real numbers. Quantitative and proportional reasoning as a foundation for algebraic reasoning. Elementary statistical and probabilistic reasoning. (Not available towards graduation in the College of Engineering and Sciences). Typically offered Fall Spring.

### **MA 13900 - Mathematics For Elementary Teachers III**

**Prerequisite(s):** MA 13700 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Geometric, measurement and spatial reasoning in one, two and three dimensions as the basis for elementary school geometry. Metric and non-metric geometry, transformation geometry. (Not available for credit toward graduation in the College of Engineering and Sciences). Typically offered Fall Spring.

### **MA 14700 - Algebra And Trigonometry For Technology**

**Prerequisite(s):** (MA 11500 FOR LEVEL UG WITH MIN. GRADE OF C- OR MA 11100 FOR LEVEL UG WITH MIN. GRADE OF C-) OR APPL FOR MIN. SCORE OF 045

Credit Hours: 3.00. MA 14700 and 14800 is a two semester sequence in algebra and trigonometry for students in technology. The emphasis is on technique and problem solving. MA14700 concentrates on topics in algebra. NOT open to students with credit in MA 15100 or 15300. Typically offered Fall Spring Summer.

### **MA 14800 - Algebra And Trigonometry For Technology II**

**Prerequisite(s):** MA 14700 FOR LEVEL UG WITH MIN. GRADE OF C- OR MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Continuation of MA 14700. MA 14800 concentrates on trigonometry. Not open to students with credit in MA 15100 or MA 15400. Typically offered Fall Spring Summer.

### **MA 15200 - College Algebra**

**Prerequisite(s):** MA 11100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This is a course in college algebra for students who do not need the technical skills required for those who are planning to continue with calculus. There will be an emphasis on applied problems and graphing techniques. Topics covered: real numbers, linear functions, solving linear equations and systems of linear equations, absolute value equations and inequalities, rational expressions, complex numbers, proportions, solving quadratic equations, exponential and logarithmic functions, circle and parabola equations, and the mathematics of finance including compound interest and annuities. Students receiving and "A" or "B" in MA 15200 may continue with MA 15400. (Not available for credit toward graduation in the College of Science.) Prerequisite: demonstrated competence in intermediate algebra. Typically offered Fall Spring Summer.

### **MA 15300 - College Algebra**

**Prerequisite(s):** MA 11100 FOR LEVEL UG WITH MIN. GRADE OF C OR MA 11500 FOR LEVEL UG WITH MIN. GRADE OF C OR APPL FOR MIN. SCORE OF 045

Credit Hours: 3.00. MA 15300-15400 covers algebra and trigonometry for students with inadequate preparation for calculus. MA 15300 is College Algebra. Credit may not be earned in more than one of MA 14700, MA 15100, MA 15200 and MA 15300. MA 15300-15400 is a two-semester version of MA 15900. Typically offered Fall Spring Summer. CTL: IMA 1601 College Algebra

### **MA 15400 - Trigonometry**

**Prerequisite(s):** MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C OR APPL FOR MIN. SCORE OF 060 OR ALEK FOR MIN. SCORE OF 050

Credit Hours: 3.00. Continuation of MA 15300. MA 15400 is Trigonometry. Credit may not be earned in more than one of MA 14800, MA 15400, or MA 15900. Typically offered Fall Spring Summer. CTL: IMA 1608 Trigonometric Functions

### **MA 15900 - Precalculus**

**Prerequisite(s):** APPL FOR MIN. SCORE OF 070

Credit Hours: 5.00. Algebra and trigonometry topics designed to prepare students for calculus. For credit towards graduation, students who use the credits earned in MA 15900 may not use credits earned in any of the following courses: MA 14700, MA 14800, MA 15300, or MA 15400. High School algebra and trigonometry required. Four years of high school mathematics strongly recommended. Typically offered Fall Spring.

### **MA 15910 - Introduction To Calculus**

**Prerequisite(s):** MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C- OR APPL FOR MIN. SCORE OF 060

Credit Hours: 3.00. A survey of differential and integral calculus. Applications to the agricultural, life, managerial, and social sciences. Not available for credit toward graduation in the School of Science. Typically offered Fall Spring.

### **MA 16019 - Applied Calculus I For Technology**

**Prerequisite(s):** MA 14800 FOR LEVEL UG WITH MIN. GRADE OF C- OR APPL FOR MIN. SCORE OF 075

Credit Hours: 4.00. This course develops topics from analytical geometry and introduces differentiation and integration. Typically offered Fall Spring Summer.

### **MA 16021 - Applied Calculus II And Differential Equations**

**Prerequisite(s):** MA 21900 FOR LEVEL UG WITH MIN. GRADE OF C- OR MA 16019 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Techniques of integration and applications to technology problems such as work and fluid pressure; infinite series, convergence tests; differential equations and initial value problems; separable differential equations, second order differential equations; Laplace transform; Fourier series. Typically offered Fall Spring Summer.

### **MA 16031 - Calculus I For Life Sciences**

**Prerequisite(s):** MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 15400 FOR LEVEL UG WITH MIN. GRADE OF C- OR MA 15900 FOR LEVEL UG WITH MIN. GRADE OF C- OR APPL FOR MIN. SCORE OF 075



Credit Hours: 3.00. This is the first course in a two-course sequence. It covers the single-variable calculus topics of value to majors in the life sciences. Topics include functions, limits, derivatives and their applications to the life sciences, and discrete-time dynamical systems. Typically offered Fall Spring Summer.

### **MA 16032 - Calculus II For Life Sciences**

**Prerequisite(s):** MA 16031 FOR LEVEL UG WITH MIN. GRADE OF C- OR MA 22300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This is the second course in a two-course sequence. Topics will include continued work with differentiation and integration of elementary functions and their compositions, application to pure-time and autonomous differential equations, and basic probability applied to life-science problems. Typically offered Fall Spring Summer.

### **MA 16100 - Plane Analytic Geometry And Calculus I**

**Prerequisite(s):** MA 15900 FOR LEVEL UG WITH MIN. GRADE OF C OR (MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C AND MA 15400 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 5.00. Introduction to differential and integral calculus of one variable, with applications. Some schools or departments may allow only 4 credit hours toward graduation for this course. Designed for students who have not had at least a one-semester calculus course in high school, with a grade of "A" or "B". Not open to students with credit in MA 16500. Demonstrated competence in college algebra and trigonometry. Typically offered Fall Spring Summer.

### **MA 16200 - Plane Analytic Geometry And Calculus II**

**Prerequisite(s):** MA 16100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 5.00. Continuation of MA 16100. Vectors in two and three dimensions, techniques of integration, infinite series, conic sections, polar coordinates, surfaces in three dimensions. Some schools or departments may allow only 4 credit hours toward graduation for this course. Typically offered Fall Spring Summer.

### **MA 16300 - Integrated Calculus Analysis Geometry I**

**Prerequisite(s):** MA 15900 FOR LEVEL UG WITH MIN. GRADE OF C- OR MA 15400 FOR LEVEL UG WITH MIN. GRADE OF C- OR APPL FOR MIN. SCORE OF 085

Credit Hours: 5.00. Topics from plane analytic geometry. Introduction to differentiation and integration. Applications. Typically offered Fall Spring Summer.

### **MA 16400 - Integrated Calculus Analysis Geometry II**

**Prerequisite(s):** MA 16300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 5.00. Continuation of MA 16300. Completion of introductory study of topics in plane analytic geometry and the calculus of one variable, infinite series. Typically offered Fall Spring Summer.

### **MA 16700 - Plane Analytical Geometry & Calculus I**

**Prerequisite(s):** MA 15900 FOR LEVEL UG WITH MIN. GRADE OF C OR (MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C AND MA 15400 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 5.00. Plane analytic geometry, differential calculus and an introduction to integral calculus of functions of a single variable, with applications. MA 16700 covers the same concepts and topics as MA 16100 combined with a cooperative learning environment and computer laboratory experience. Graduation credit may not be earned for more than one of MA 16100, 16700 and 22300. Typically offered Summer Fall Spring.

### **MA 16900 - Plane Analytical Geometry And Calculus II**

**Prerequisite(s):** (MA 16100 FOR LEVEL UG WITH MIN. GRADE OF C OR MA 16700 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 5.00. Vectors, integral calculus of functions of a single variable, sequences and series, parametric equations and calculus, conics, and polar coordinates, with applications. MA 16900 covers the same concepts and topics as MA 16200 combined with a cooperative learning environment and computer laboratory experience. Graduation credit may not be earned for more than one of MA 16200, 16900 and 22400. Typically offered Summer Fall Spring.

### **MA 20500 - Discrete Mathematics For Computer Technology**

**Prerequisite(s):** MA 14700 FOR LEVEL UG WITH MIN. GRADE OF C- OR MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C- OR CLM FOR MIN. SCORE OF 076

Credit Hours: 3.00. The course covers topics in discrete mathematics which are essential to the discipline of computer technology. These include: logic, sequences, mathematical induction, basic set theory, functions, recursion, relations, graphs, and trees. Typically offered Fall Spring Summer.

**MA 21300 - Finite Mathematics I****Prerequisite(s):** MA 11100 FOR LEVEL UG WITH MIN. GRADE OF B

Credit Hours: 3.00. Basic logic, set theory. Elementary probability, Markov chains. Vectors, matrices, linear systems, elementary graph theory. Applications to finite models in the managerial, social, and life sciences; and computer science. Typically offered Summer.

**MA 22300 - Introductory Analysis I****Prerequisite(s):** MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C AND MA 15400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Differential calculus with applications to management and economics. Prerequisites: Demonstrated competence in algebra and trigonometry. Typically offered Fall Spring Summer. CTL: IMA 1604 Calculus - Short I

**MA 22400 - Introductory Analysis II****Prerequisite(s):** MA 22300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Integral calculus; partial derivatives; differentials; introduction to differential equations. Applications to management and economics. Typically offered Fall Spring Summer. CTL: IMA 1605 Calculus - Short II

**MA 23700 - Advanced Topics In Mathematics For Elementary School Teachers I****Prerequisite(s):** MA 13700 FOR LEVEL UG WITH MIN. GRADE OF B OR MA 13800 FOR LEVEL UG WITH MIN. GRADE OF B OR MA 13900 FOR LEVEL UG WITH MIN. GRADE OF B

Credit Hours: 3.00. Topics in algebra and functions such as axioms, algebraic notation and equations. Modeling of problems, concepts of a function, representation of functions, and types of functions (linear, quadratic, exponential, etc.), number systems, number theory, and set theory. Appropriate technologies for teaching such topics will be used. Permission of department required. Typically offered Fall Spring Summer.

**MA 23800 - Advanced Topics In Mathematics For Elementary School Teachers II****Prerequisite(s):** MA 13700 FOR LEVEL UG WITH MIN. GRADE OF B AND MA 13800 FOR LEVEL UG WITH MIN. GRADE OF B

Credit Hours: 3.00. Topics in data analysis and probability such as nature and uses of data, designing investigations and sampling, distinguishing between types of data, appropriate representations of data, interpretations of data, basic concepts of probability and randomness, simulations. Appropriate technologies for teaching such topics will be used. Permission of department required. Typically offered Fall Spring Summer.

**MA 23900 - Advanced Topics In Mathematics For Elementary School Teachers III****Prerequisite(s):** MA 13700 FOR LEVEL UG WITH MIN. GRADE OF B AND MA 13900 FOR LEVEL UG WITH MIN. GRADE OF B

Credit Hours: 3.00. Topics in proportionality, geometry, and measurement such as proportional reasoning and rescaling in geometric contexts, perspective, congruence and similarity, basic geometric figures, transformations, coordinate geometry, geometric measurement in multiple dimensions, constructions, proof and argumentation. Appropriate technologies for teaching such topics will be used. Permission of department required. Typically offered Fall Spring Summer.

**MA 26100 - Multivariate Calculus****Prerequisite(s):** MA 16400 FOR LEVEL UG WITH MIN. GRADE OF C OR MA 16900 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 4.00. Continuation of MA 16300 (MA 16700) and MA 16400 (MA 16900). Parametric equations and calculus, solid analytic geometry, vector functions, differential and integral calculus of functions of two or more variables, and an introduction to vector calculus with applications. Typically offered Fall Spring Summer.

**MA 26200 - Linear Algebra And Differential Equations****Prerequisite(s):** MA 26100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 4.00. Linear algebra, elements of differential equations. Not open to students with credit in MA 26500 or 26600. Typically offered Fall Spring Summer.

**MA 26400 - Differential Equations****Prerequisite(s):** MA 26100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A first course in ordinary differential equations. First order differential equations, linear and nonlinear systems of differential equations, and second order differential equations. Not open to students with credit in MA 26200. Typically offered Fall Spring Summer.

**MA 26500 - Linear Algebra****Prerequisite(s):** MA 16400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Introduction to linear algebra. Systems of linear equations, matrix algebra, vector spaces, determinants, eigenvalues and eigenvectors, diagonalization of matrices, applications. Not open to students with credit in MA 26200, 27200, 35000 or 35100. Typically offered Fall Spring Summer.

**MA 30303 - Internship In Mathematical Sciences**

Credit Hours: 1.00 to 3.00. Directed in-service experience with employers that may include but not limited to government agencies, private industry, and community organizations. Permission of department required. Typically offered Fall Spring Summer.

**MA 31200 - Probability****Prerequisite(s):** MA 26100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A calculus-based introduction to probability theory and stochastic processes. Topics include probability spaces, random variables, distributions, expectation, conditional probability, and discrete-state-space Markov chains. Typically offered Fall Spring Summer.

**MA 31500 - Introduction To Abstract Mathematics****Prerequisite(s):** MA 26100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course is a bridge from the mainly computational mathematics courses to the upper-level abstract courses. It focuses on the development of students' abilities to construct proofs, examples and counter examples. Typically offered Fall Spring Summer.

**MA 33000 - Concepts In Geometry****Prerequisite(s):** MA 26100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Fundamental concepts in geometry. Euclidean, non-Euclidean (including spherical and hyperbolic geometry), and fractal geometry. Typically offered Fall Spring Summer.

**MA 34500 - Coding And Information Theory****Prerequisite(s):** MA 26500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An introduction to topics in coding and information theory: error-detecting and error-correcting codes, variable-length codes, decoding, entropy, information, channel capacity, Shannon's theorems, basics of algebraic coding theory. Typically offered Fall Spring Summer.

**MA 34800 - Discrete Mathematics****Prerequisite(s):** MA 26100 FOR LEVEL UG WITH MIN. GRADE OF C OR MA 26500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A problem-centered introduction to topics in discrete mathematics including induction, permutations, combinations, graphs, recurrence relations and generating functions. Typically offered Fall Spring Summer.

**MA 35100 - Elementary Linear Algebra**

**Prerequisite(s):** MA 26200 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND (MA 31500 FOR LEVEL UG WITH MIN. GRADE OF C OR MA 33000 FOR LEVEL UG WITH MIN. GRADE OF C OR MA 34800 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 3.00. Systems of linear equations, finite dimensional vector spaces, matrices, determinants, eigenvalues and eigenvector applications to analytical geometry. Not open to students with credit in MA 26500. Typically offered Fall Spring.

**MA 37700 - Computational Mathematics I****Prerequisite(s):** MA 26500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This is the first in a two-course sequence. Students will be introduced to the techniques and concepts of computational mathematics. Students will study the reliability, efficiency, and computer implementation of algorithms and numerical methods within the topics: solutions of equations and systems, numerical linear algebra and eigenvalues, interpolation, approximation, and curve fitting. Typically offered Fall Spring Summer.

**MA 37800 - Computational Mathematics II****Prerequisite(s):** MA 37700 FOR LEVEL UG WITH MIN. GRADE OF C- OR MA 26400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This is the second in a two-course sequence. Students will study the reliability, efficiency, and

computer implementation of algorithms and numerical methods within the topics: numerical differentiation and integration, numerical optimization, and differential equations. Typically offered Fall Spring Summer.

### **MA 40100 - Problem Solving In Mathematics**

**Prerequisite(s):** MA 26200 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND (MA 31500 FOR LEVEL UG WITH MIN. GRADE OF C OR MA 33000 FOR LEVEL UG WITH MIN. GRADE OF C OR MA 34800 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 3.00. Intended primarily for prospective teachers, this course deals with techniques of problem solving and proof. Problems are taken from algebra, number theory, and geometry. Topics relevant to the school curriculum are emphasized. The use of microcomputers and calculators in problem solving is discussed. Typically offered Fall Spring.

### **MA 40300 - Mathematical Research**

**Prerequisite(s):** MA 26100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 1.00 to 3.00. Undergraduate research in the mathematical sciences under the direction of a faculty member. May be used to fulfill an experiential learning requirement. Permission of instructor required. Typically offered Fall Spring Summer.

### **MA 44600 - Introduction to Real Analysis**

**Prerequisite(s):** MA 26500 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 26400 FOR LEVEL UG WITH MIN. GRADE OF C- (MAY BE TAKEN CONCURRENTLY) AND MA 31500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An introduction to basic concepts of real analysis; topology of the real line, sequences, series, and various forms of convergence, applications to derivatives and integrals. Typically offered Fall Spring Summer.

### **MA 45300 - Elements Of Algebra I**

**Prerequisite(s):** MA 26500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Fundamental properties of integers, polynomials, groups, rings, and fields, with emphasis on problem solving and applications. Not open to students with credit in MA 45000. Typically offered Fall Spring.

### **MA 47200 - Introduction To Applied Mathematics**

**Prerequisite(s):** MA 26500 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 26400 FOR LEVEL UG WITH MIN. GRADE OF C- AND CS 20600 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An introduction to the basic ideas and methods of applied mathematics. Topics taken from elementary partial differential equations, separation of variables and Fourier series, Fourier transforms, calculus of variations, applied linear algebra, numerical methods, modeling. Typically offered Fall Spring Summer.

### **MA 48000 - The Practicum In Applied Mathematics**

Credit Hours: 3.00. The practicum course consists of a small team (a faculty advisor and 1-4 students) working on a real problem obtained in conjunction with a local business or industry. Not more than two terms of MA 480 and/or CS 480 may be taken for credit. Typically offered Fall Spring Summer.

### **MA 49000 - Topics In Mathematics For Undergraduates**

Credit Hours: 1.00 to 6.00. Supervised reading courses as well as special topics courses for undergraduates are given under this number. Permission of instructor required. Typically offered Fall Spring Summer.

### **MA 51000 - Vector Calculus**

**Prerequisite(s):** MA 26400 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 26500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Calculus of functions of several variables and of vector fields in orthogonal coordinate systems. Optimization problems, implicit function theorem, Green's theorem, Stokes' theorem, divergence theorems. Applications to engineering and the physical sciences. Not open to students with credit in MA 36200 or 41000. Typically offered Fall Spring Summer.

### **MA 52000 - Boundary Value Problems Of Differential Equations**

**Prerequisite(s):** MA 26400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Separation of variables; Fourier series; boundary value problems; Fourier transforms; Bessel functions; Legendre polynomials. Typically offered Fall Spring Summer.

### **MA 52100 - Introduction To Optimization Problems**

**Prerequisite(s):** MA 26500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Necessary and sufficient conditions for local extrema in programming problems and in the calculus

of variations. Control problems; statement of maximum principles and applications. Discrete control problems. Typically offered Fall.

### **MA 52500 - Introduction To Complex Analysis**

**Prerequisite(s):** MA 26400 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 26500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Complex numbers and complex-valued functions of one complex variable; differentiation and contour integration; Cauchy's theorem; Taylor and Laurent series; residues; conformal mapping; applications. Not open to students with credit in MA 42500. Typically offered Fall Spring Summer.

### **MA 53200 - Elements Of Stochastic Processes**

Credit Hours: 3.00. (STAT 53200) A basic course in stochastic models, including discrete and continuous time Markov chains and Brownian motion, as well as an introduction to topics such as Gaussian processes, queues, epidemic models, branching processes, renewal processes, replacement, and reliability problems. Typically offered Spring.

### **MA 54000 - Analysis I**

**Prerequisite(s):** MA 44600 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Metric spaces, compactness and connectedness, sequences and series, continuity and uniform continuity, differentiability, Taylor's Theorem, Riemann-Stieltjes integrals. Typically offered Fall Spring Summer.

### **MA 54100 - Analysis II**

**Prerequisite(s):** MA 54000 FOR LEVEL GR WITH MIN. GRADE OF C-

Credit Hours: 3.00. Sequences and series of functions, uniform convergence, equicontinuous families, the Stone-Weierstrass Theorem, Fourier series, introduction to Lebesgue measure and integration. Typically offered Fall Spring Summer.

### **MA 55300 - Introduction To Abstract Algebra**

**Prerequisite(s):** MA 45300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Group theory: Sylow theorems, Jordan Hlder theorem, solvable groups. Ring theory: unique factorization in polynomial rings and principal ideal domains. Field theory: ruler and compass constructions, roots of unity, finite fields, Galois theory, solvability of equations by radicals. Typically offered Fall.

### **MA 55400 - Linear Algebra**

**Prerequisite(s):** MA 26500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Review of basics: vector spaces, dimension, linear maps, matrices determinants, linear equations. Bilinear forms; inner product spaces; spectral theory; eigenvalues. Modules over a principal ideal domain; finitely generated abelian groups; Jordan and rational canonical forms for a linear transformation. Typically offered Fall Spring.

### **MA 55600 - Introduction To The Theory Of Numbers**

**Prerequisite(s):** MA 26100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Divisibility, congruences, quadratic residues, Diophantine equations, the sequence of primes. Typically offered Fall Spring Summer.

### **MA 56000 - Fundamental Concepts Of Geometry**

**Prerequisite(s):** MA 26100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Foundations of Euclidean geometry, including a critique of Euclid's "Elements" and a detailed study of an axiom system such as that of Hilbert. Independence of the parallel axiom and introduction to non-Euclidean geometry. Typically offered Fall Spring Summer.

### **MA 56200 - Introduction To Differential Geometry And Topology**

Credit Hours: 3.00. Smooth manifolds; tangent vectors; inverse and implicit function theorems; submanifolds; vector fields; integral curves; differential forms; the exterior derivative; DeRham cohomology groups; surfaces in  $E^3$ ., Gaussian curvature; two dimensional Riemannian geometry; Gauss-Bonnet and Poincare theorems on vector fields. Typically offered Fall.

### **MA 57100 - Elementary Topology**

**Prerequisite(s):** MA 44600 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Fundamentals of point set topology with a brief introduction to the fundamental group and related topics, topological and metric spaces, compactness, connectedness, separation properties, local compactness, introduction to function spaces, basic notions involving deformations of continuous paths. Typically offered Fall.

### **MA 58100 - Introduction To Logic For Teachers**

**Prerequisite(s):** MA 26100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Sentential and general theory of inference and nature of proof: elementary axiom systems. Typically offered Fall Spring Summer.

### **MA 58300 - History Of Elementary Mathematics**

Credit Hours: 3.00. A survey of elementary mathematics before calculus. An effort will be made to link the history of mathematics to that of other sciences and to the social history of the relevant periods. Some acquaintance with ancient or medieval history of Europe is desirable. Typically offered Fall Spring Summer.

### **MA 58700 - General Set Theory**

**Prerequisite(s):** MA 45300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Set algebra; functions and relations; ordering relations; transfinite induction; cardinal and ordinal numbers; the axiom of choice; maximal principles; the continuum hypothesis; the axiom of constructibility; applications to algebra, analysis, and topology. Typically offered Fall Spring Summer.

### **MA 59800 - Topics In Mathematics**

Credit Hours: 1.00 to 5.00. Supervised reading courses as well as dual-level special topics courses are given under this number. Permission of instructor required. Typically offered Fall Spring Summer.

## **Mechanical Engineering**

### **ME 11400 - Engineering Drawing**

Credit Hours: 2.00. A technical drawing course covering geometric constructions, pictorial and multiview drawing, sections, graphical vector solutions, dimensioning, detail and assembly drawings. Development of free hand sketching techniques as well as the use of drafting instruments. Typically offered Fall Spring Summer.

### **ME 11500 - Engineering Drawing I**

Credit Hours: 1.00. (CE 11500) A technical drawing course covering engineering geometry, orthographic projection, auxiliary views, dimensioning, and tolerancing using sketching techniques, and 2-D CAD. Typically offered Summer Fall Spring.

### **ME 11600 - Engineering Drawing II**

**Prerequisite(s):** ME 11500 FOR LEVEL UG WITH MIN. GRADE OF C- OR CE 11500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 1.00. (CE 11600) A continuation of the technical drawing course covering 3-D parametric modeling, part assembly modeling, and detail and assembly drawings. Typically offered Summer Fall Spring.

### **ME 20000 - Thermodynamics I**

**Prerequisite(s):** MA 26100 FOR LEVEL UG WITH MIN. GRADE OF D- AND (ME 27000 FOR LEVEL UG WITH MIN. GRADE OF D- OR CE 27100 FOR LEVEL UG WITH MIN. GRADE OF D-)

Credit Hours: 3.00. First and second laws of thermodynamics, entropy, reversible and irreversible processes, properties of pure substances. Application to engineering problems. Typically offered Spring Summer Fall.

### **ME 27000 - Basic Mechanics I**

**Prerequisite(s):** ENGR 18100 FOR LEVEL UG WITH MIN. GRADE OF D- AND MA 26100 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. Vector operations, forces and couples, free body diagrams, equilibrium of a particle and of rigid bodies. Friction. Distributed forces. Centers of gravity and centroids. Applications from structural and machine elements, such as bars, trusses, and friction devices. Kinematics and equations of motion of a particle for rectilinear and curvilinear motion. Typically offered Fall Spring Summer.

### **ME 27100 - Basic Mechanics I (Statics)**

**Prerequisite(s):** MA 16300 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 16400 FOR LEVEL UG WITH MIN. GRADE OF C- AND PHYS 15200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. (CE 27101) Review of vector algebra and equilibrium. Hydrostatics, virtual work, static stability, friction. First and second moments of areas, volumes, and masses, center of gravity. Credit is not allowed for both CE 27101 and ME 27100. Typically offered Fall Spring Summer.

### **ME 27400 - Basic Mechanics II**

**Prerequisite(s):** (ME 27000 FOR LEVEL UG WITH MIN. GRADE OF D- OR CE 27100 FOR LEVEL UG WITH MIN. GRADE OF D-) AND MA 26200 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. Review and extension of particle motion to include energy and momentum principles. Planar

kinematics of rigid bodies. Kinetics for planar motion of rigid bodies, including equations of motion and principles of energy and momentum. Three-dimensional kinematics and kinetics of rigid bodies. Linear vibrations, with emphasis on single-degree-of-freedom systems. Typically offered Fall Spring Summer.

### **ME 27500 - Basic Mechanics II (Dynamics)**

**Prerequisite(s):** MA 26100 FOR LEVEL UG WITH MIN. GRADE OF C- AND (ME 27100 FOR LEVEL UG WITH MIN. GRADE OF C- OR CE 27101 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 3.00. (CE 27500) Fundamental concepts, kinematics, translation and rotation. Kinetics impulse, momentum, work, energy. Rectilinear and curvilinear translation of point masses. Plane motion of rigid bodies and vibration. Typically offered Fall Spring Summer.

### **ME 29100 - Industrial Practice I**

Credit Hours: 0.00. Practice in industry and comprehensive written report of this practice. Typically offered Fall Spring Summer.

### **ME 29200 - Industrial Practice II**

Credit Hours: 0.00. Practice in industry and comprehensive written report of this practice. Typically offered Fall Spring Summer.

### **ME 30201 - Thermodynamics II**

**Prerequisite(s):** ME 20000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Properties of gas mixtures, air-vapor mixtures, applications. Thermodynamics of combustion processes, equilibrium. Energy conversion, power, and refrigeration systems. Typically offered Fall Spring Summer.

### **ME 30500 - General Thermodynamics I**

**Prerequisite(s):** MA 26100 FOR LEVEL UG WITH MIN. GRADE OF C- AND PHYS 26100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Properties of pure substances, work and heat, first and second laws of thermodynamics, entropy, irreversibility and availability, power and refrigeration cycles, thermodynamic relations. Typically offered Fall Spring Summer.

### **ME 30600 - General Thermodynamics II**

**Prerequisite(s):** ME 30500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Thermodynamic relations. Power and refrigeration cycles, methods of thermodynamic analysis, technical thermodynamics and design, energy conversion. Thermodynamics of combustion processes and equilibrium. Typically offered Fall Spring Summer.

### **ME 31001 - Fluid Mechanics**

**Prerequisite(s):** ME 30201 FOR LEVEL UG WITH MIN. GRADE OF D- AND ME 27400 FOR LEVEL UG WITH MIN. GRADE OF D- AND ENGR 45000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. Continuum, velocity field, fluid statics, manometers, basic conservation laws for systems and control volumes, dimensional analysis. Euler and Bernoulli equations, viscous flows, boundary layers, flow in channels and around submerged bodies, one-dimensional gas dynamics, turbomachinery. Typically offered Fall Spring Summer.

### **ME 31100 - Engineering Economics And Project Management**

**Prerequisite(s):** MA 16400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. (ECE 31200). Introduction to principles of engineering project management and techniques. Topics include technical feasibility studies, project specifications, scheduling, validation, lifecycle costing, and economic analysis. The focus is on managing an engineering project through scheduling, budgeting, resource management, execution and control. Typically offered Summer Fall Spring.

### **ME 31200 - Fluid Mechanics**

**Prerequisite(s):** MA 26400 FOR LEVEL UG WITH MIN. GRADE OF C- AND (ME 27500 FOR LEVEL UG WITH MIN. GRADE OF C- OR CE 27500 FOR LEVEL UG WITH MIN. GRADE OF C-) AND ME 30500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. (CE 31200) Continuum, velocity field, fluid statics, basic conservation laws for systems and control volumes, dimensional analysis, Euler and Bernoulli equations, viscous flows, boundary layer flow in channels and around submerged bodies, one-dimensional gas dynamics. Typically offered Fall Spring Summer.

### **ME 31300 - Fluid Mechanics Laboratory**

**Prerequisite(s):** MA 26400 FOR LEVEL UG WITH MIN. GRADE OF C- AND ME 27500 FOR LEVEL UG WITH MIN. GRADE OF C- AND ME 30500 FOR LEVEL UG WITH MIN. GRADE OF D- AND (ME 31200 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) OR CE 31200 FOR LEVEL UG WITH

MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY )

Credit Hours: 1.00. (CE 31300) Introduction to fluid mechanics laboratory, experiments on flow patterns, velocity profile in an air pipe, wind tunnel calibration, draining of a tank, pipe friction, boundary layer studies, falling ball experiments, and viscosity measurements. Typically offered Fall Spring Summer.

### **ME 31601 - Heat And Mass Transfer**

**Prerequisite(s):** ME 31001 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. Fundamentals of heat transfer by conduction, convection, and radiation; mass transfer by convection. Relevance to engineering applications. Typically offered Fall Spring Summer.

### **ME 32000 - Kinematic Analysis And Design**

**Prerequisite(s):** MA 26400 FOR LEVEL UG WITH MIN. GRADE OF C- AND (ME 11600 FOR LEVEL UG WITH MIN. GRADE OF C- OR CE 11600 FOR LEVEL UG WITH MIN. GRADE OF C-) AND ME 27500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Graphical, analytical, and computer techniques for analyzing displacements, velocities, and accelerations in mechanisms. Analysis and design of linkages, cams and gears. Laboratory projects include analysis, design, construction, and evaluation of mechanisms. Typically offered Fall Spring Summer.

### **ME 32401 - Mechanics Of Materials**

**Prerequisite(s):** ME 27400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. (CE 32401) Integrated approach to mechanics of materials emphasizing mechanics fundamentals as applied to machine design applications. Stress and strain in machine elements; mechanical properties of materials; extension, torsion, and bending of members; thermal stress; pressure vessels; static indeterminacy, stress transformation, Mohr's circle. Typically offered Fall Spring Summer.

### **ME 32500 - Dynamics Of Physical Systems**

**Prerequisite(s):** ECE 20100 FOR LEVEL UG WITH MIN. GRADE OF C- AND ME 27500 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 26400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Development and solution of linear models; translational and rotational mechanical systems, electrical systems, electromechanical systems, thermal systems, hydraulic systems. The Laplace transform, transfer functions, and Bode plots, state variable representation and solutions. Computer analysis and simulation. Typically offered Fall Spring Summer.

### **ME 32800 - Mechanics Of Materials Lab**

**Prerequisite(s):** ME 27400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 1.00. (CE 32800) Experimental approach to mechanics of materials emphasizing mechanics fundamentals as applied to machine design applications. Experiments cover stress and strain in machine elements; mechanical properties of materials; extension, torsion, and bending of members; thermal stress; pressure vessels; static indeterminacy, stress transformation, Mohr's circle. Typically offered Fall Spring.

### **ME 33001 - Structure And Properties Of Materials**

**Prerequisite(s):** (ME 32401 FOR LEVEL UG WITH MIN. GRADE OF D- OR CE 32401 FOR LEVEL UG WITH MIN. GRADE OF D-)

Credit Hours: 3.00. (CE 33001) The relationship between the structure of materials and the resulting mechanical, thermal, electrical, and optical properties. Atomic structure, bonding, atomic arrangement, crystal symmetry, crystal structure, habit, lattices, defects, and the use of X-ray diffraction. Phase equilibria and microstructural development. Applications to design. Typically offered Fall Spring Summer.

### **ME 34500 - Mechanical Engineering Experimentation**

**Prerequisite(s):** CE 27300 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 26400 FOR LEVEL UG WITH MIN. GRADE OF C- AND ME 27500 FOR LEVEL UG WITH MIN. GRADE OF C- AND ME 32500 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Mechanical measurements and methods of experimentation. Calibration standards, statistical replication and error minimization, transducers and instrumentation, dimensional analysis and the design of an experiment. Laboratory experiments will require formal reports and will deal with displacements, velocities, pressures, and elastic strains. Typically offered Fall Spring Summer.

### **ME 35300 - Machine Design I**

**Prerequisite(s):** ME 32401 FOR LEVEL UG WITH MIN. GRADE OF D- OR CE 32401 FOR LEVEL UG WITH MIN. GRADE OF D-



Credit Hours: 4.00. Introduction to the principles of design and analysis of machines and machine components. Design for functionality, motion, force, strength, and reliability. The laboratory experience provides open-ended projects to reinforce the design process. Typically offered Fall Spring Summer.

### **ME 36600 - Systems And Measurements**

**Prerequisite(s):** ME 27400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Introduction to engineering measurement fundamentals, including digital and frequency domain techniques, noise, and error analysis. Typically offered Fall Spring Summer.

### **ME 37600 - System Modeling And Analysis**

**Prerequisite(s):** ENGR 45000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Introduction to modeling electrical, mechanical, fluid, and thermal systems containing elements such as sensors and actuators used in feedback control systems. Dynamic response and stability characteristics. Closed loop system analysis including proportional, integral, and derivative elements to control system response. Typically offered Fall Spring Summer.

### **ME 39300 - Industrial Practice III**

Credit Hours: 0.00. Practice in industry and comprehensive written report of this practice. Typically offered Fall Spring Summer.

### **ME 39400 - Industrial Practice IV**

Credit Hours: 0.00. Practice in industry and comprehensive written report of this practice. Typically offered Fall Spring Summer.

### **ME 39500 - Industrial Practice V**

Credit Hours: 0.00. Practice in industry and comprehensive written report of this practice. Typically offered Fall Spring Summer.

### **ME 40400 - Finite Element Analysis**

**Prerequisite(s):** MA 26400 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 26500 FOR LEVEL UG WITH MIN. GRADE OF C- AND CE 27300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. (CE 40400) Brief history of finite element method and ANSYS; direct formulation; minimum total potential energy formulation; verification of results; trusses. Examples using ANSYS, one-dimensional elements. Numerical integration, Gauss Quadrature. Examples of one-dimensional elements in ANSYS; heat transfer problems; solid mechanics problems; two-dimensional elements. Pre-processing with ANSYS; boundary conditions; applications; heat conduction problems; torsion problems; beams and frames. Credit is not allowed for both ME 40400 and CE 40400. Typically offered Fall Spring Summer.

### **ME 41000 - Fluid Mechanics And Hydraulics**

**Prerequisite(s):** ME 31001 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. (CE 41000) This course is a continuation of Fluid Mechanics. Topics will include hydraulics, external boundary layer flow, and introduction to fluid power and gas dynamics. Typically offered Fall Spring Summer.

### **ME 41300 - Noise Control**

Credit Hours: 3.00. Fundamentals of acoustic waves. Psychoacoustics and theories of hearing. Environmental and building acoustics. Measurement methods and common instrumentation. Noise control methods. Machinery noise. Community reaction. Legal aspects. Design-oriented semester project. Course work in differential equations. Typically offered Spring.

### **ME 41600 - Heat Transfer**

**Prerequisite(s):** ME 30500 FOR LEVEL UG WITH MIN. GRADE OF D- AND ME 31200 FOR LEVEL UG WITH MIN. GRADE OF D- AND ME 31300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Steady state and transient heat transfer by conduction, laminar and turbulent convection, film condensation and boiling, and by radiation. Combined heat and mass transfer by diffusion and convection. The analysis and design of heat exchangers for process heat transfer. Typically offered Fall Spring Summer.

### **ME 41700 - Heat Transfer Laboratory**

**Prerequisite(s):** ME 31300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 1.00. Heat transmission laboratory with measurements of temperature and flows. Experiments include temperature profiles in solids, thermal conductivity. Typically offered Fall Spring Summer.

### **ME 42600 - Heating And Air Conditioning Analysis**

**Prerequisite(s):** ME 41600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Psychometrics, air conditioning systems, equipment selection, duct design and piping design. Heating and cooling loads, solar radiation and heat transmission in buildings. Heat pumps. Application of air conditioning to residences, computer rooms, light commercial and high-rise buildings. Typically offered Fall Spring.

### **ME 42900 - Senior Engineering Design I**

**Prerequisite(s):** ENGL 30700 FOR LEVEL UG WITH MIN. GRADE OF D- AND ME 30500 FOR LEVEL UG WITH MIN. GRADE OF D- AND ME 31100 FOR LEVEL UG WITH MIN. GRADE OF D- AND ME 31200 FOR LEVEL UG WITH MIN. GRADE OF D- AND CE 27300 FOR LEVEL UG WITH MIN. GRADE OF C- AND ME 32000 FOR LEVEL UG WITH MIN. GRADE OF D- AND ME 32500 FOR LEVEL UG WITH MIN. GRADE OF D- AND MSE 20000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. (ECE 42900, CE 42900). The senior engineering design courses I and II constitute a two semester sequence of an interdisciplinary activity. The objective of these courses is to provide engineering students with supervised experience in the process and practice of engineering design Projects are chosen by the students or the faculty. Students working in teams pursue an idea from conception to realistic design The course concludes with a substantial written report and a formal oral presentation before faculty and students. Typically offered Fall Spring Summer.

### **ME 43900 - Senior Engineering Design II**

**Prerequisite(s):** ME 42900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The senior engineering design courses I and II constitute a two-semester sequence of an interdisciplinary activity. The objective of these courses is to provide engineering students with supervised experience in the process and practice of engineering design. Projects are chosen by the students or the faculty. Students working in teams pursue an idea from conception to realistic design. The course is climaxed by the presentation of a substantial written report and a formal oral presentation before faculty and students. Typically offered Fall Spring.

### **ME 44000 - Automotive Prime Movers: Green Engines And Clean Fuel**

**Prerequisite(s):** ME 30000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Internal combustion engines (ICE), hybrid engines (HE), fuel-cell engines (FCE), and alternative/renewable fuels. ICEs topics- engines with advanced combustion systems such as clean diesels, direct-injection spark-ignition engines (DISI), and low-temperature combustion (LTC) compression-ignition. HE topics- different components of hybrid engines and the powertrain design. FCE topics- fundamentals of fuel cells and automotive applications. Clean fuel topics- biofuels, hydrogen, and natural gas, as well as, other cleaner fossil fuels for automotive applications. Well-to-wheel energy and cost analysis of prime mover designs/fuels. Typically offered Spring.

### **ME 45101 - Machine Design II**

**Prerequisite(s):** ME 35300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Design and analysis of mechanical systems, for fluctuating loading. Fatigue analysis. Application of design fundamentals to mechanical components, and integration of components to form systems. Typically offered Fall Spring Summer.

### **ME 45600 - Kinematics And Dynamics Of Machinery**

**Prerequisite(s):** ME 27400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is a continuation of Basic Mechanics II. Topic will include kinematics and dynamics of machinery, synthesis, and analysis if mechanisms and machines, and computer applications in the design of mechanisms and machines. Typically offered Fall Spring Summer.

### **ME 45700 - Vibration Analysis**

**Prerequisite(s):** ENGR 45000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is an introduction to simple vibratory motions such as damped and undamped free and forced vibrations, resonance, vibratory systems with more than one degree of freedom. Topics will include Coulomb and hysteric damping, transverse vibration of beams, torsional vibration, computation of natural frequencies and mode shapes, applications. Typically offered Fall Spring Summer.

### **ME 46100 - Machine Design I**

**Prerequisite(s):** CE 27300 FOR LEVEL UG WITH MIN. GRADE OF C- AND ME 32000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. Application of mechanics and mechanics of materials to the analysis and design of machine elements. Stress and deflection analysis, statistical considerations under steady and variable loading, stress principles

applied to fasteners, springs, welded joints, and general mechanical elements. Fits and tolerances; antifriction; spur gears. Laboratory includes projects, solutions of design problems, and experiments. Typically offered Fall Spring Summer.

### **ME 46600 - Machine Design II**

**Prerequisite(s):** ME 32000 FOR LEVEL UG WITH MIN. GRADE OF D- AND ME 46100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Comprehensive study in the design and analysis of gearing, and journal bearings, clutches and brakes, and flexible mechanical elements. Introduction to reliability engineering. Introduction to finite element analysis. Laboratory includes projects and solution of design problems. Typically offered Fall Spring Summer.

### **ME 46800 - Thermal Systems Design**

**Prerequisite(s):** ME 30200 FOR LEVEL UG WITH MIN. GRADE OF D- AND ME 31001 FOR LEVEL UG WITH MIN. GRADE OF D- AND ME 31601 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. Application of thermodynamics, fluid mechanics, and heat transfer fundamentals to the design of energy engineering systems with an emphasis on modeling, simulation, economic analysis and optimization. Application include thermal regulation in buildings, heat exchangers, electronic cooling devices, manufacturing processing of primary metals and plastics, fluid machinery, pipes and ducts. Typically offered Fall Spring Summer.

### **ME 47900 - Solar Engineering Systems**

**Prerequisite(s):** ME 30201 FOR LEVEL UG WITH MIN. GRADE OF D- AND ME 31001 FOR LEVEL UG WITH MIN. GRADE OF D- AND ME 31601 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. Application of heat transfer, thermodynamics and photovoltaics to the design and analysis of solar energy collectors and systems. Theory, economics and practice of solar energy application. Typically offered Fall Spring Summer.

### **ME 48500 - Linear Control Systems**

**Prerequisite(s):** ME 32500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. (ECE 38400). Introduction to classical control theory. Transfer functions, block diagram manipulation, and signal flow graphs. Transient and steady state responses; characteristics, and design. Sensitivity analysis and disturbance rejection. System stability. Root locus analysis and design. Frequency response analysis using Bode and polar plots. Nyquist criterion and Nichols chart. Controller design using Bode plots. Laboratory will include design, simulation of topics covered, and a number of practical experiments. Credit not allowed for both ECE 38400 and ME 48500. Typically offered Summer Fall Spring.

### **ME 48600 - Introduction To Manufacturing Engineering**

**Prerequisite(s):** CE 27300 FOR LEVEL UG WITH MIN. GRADE OF C- AND MSE 20000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Modern manufacturing processes and methods including forming, shaping, machining, and joining. Productivity, quality improvement, material and energy conservation, automatic processing and inspection, process planning, manufacturing control, robotics, CAD, CAM, and computer integrated manufacturing. Typically offered Fall Spring.

### **ME 49400 - Power Plant Engineering**

**Prerequisite(s):** ME 30200 FOR LEVEL UG WITH MIN. GRADE OF D- AND ME 31001 FOR LEVEL UG WITH MIN. GRADE OF D- AND ME 31601 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. Thermodynamic analysis of power plant systems for the generation of electric power. Power cycles and design of equipment for the generation of power. Gas and steam turbines and generators. Waste heat recovery and application. Plant operations, economics and environmental impact. Typically offered Fall Spring Summer.

### **ME 49500 - Special Topic Minicourses**

Credit Hours: 1.00 to 6.00. Topics vary. Typically offered Fall Spring Summer.

### **ME 49700 - Mechanical Engineering Projects**

Credit Hours: 1.00 to 6.00. Projects or special topics of contemporary importance or of special interest outside the scope of the standard undergraduate curriculum. Interested students seek a faculty advisor in their area of special interest and together prepare a brief description of the work to be undertaken. Permission of instructor required. Typically offered Fall Spring Summer.

### **ME 50000 - Advanced Thermodynamics**

**Prerequisite(s):** ME 30600 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. The empirical, physical basis of the laws of thermodynamics. Availability/exergy concepts and applications. Properties and relations between properties in homogeneous and heterogeneous systems. The criteria of equilibrium. Application to a variety of systems and problems, including phase and reaction equilibrium. Offered in alternate years. Typically offered Fall.

### **ME 50200 - Numerical Heat And Mass Transfer**

**Prerequisite(s):** ME 41600 FOR LEVEL UG WITH MIN. GRADE OF D- AND ME 31200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is to introduce students with basic concepts and techniques in computational heat transfer and fluid dynamics, and to prepare students for development and application of computer codes for engineering design and scientific research. The topics will include finite volume methods (FVM), discrete modeling of Navier-Stokes equations and energy equations, iterative solution algorithms, grid generation, boundary conditions, convergence and accuracy, applicability and pitfalls of commercial codes, and hand-on projects. Typically offered Fall Spring Summer.

### **ME 50500 - Intermediate Heat Transfer**

**Prerequisite(s):** ME 41600 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. Heat and mass transfer by diffusion in one-dimensional, two-dimensional, transient, periodic, and phase change systems. Convective heat transfer for external and internal flows. Similarity and integral solution methods. Heat, mass, and momentum analogies. Turbulence. Buoyancy-driven flows. Convection with phase change. Radiation exchange between surfaces and radiation transfer in absorbing-emitting media. Multimode heat transfer problems. Typically offered Fall.

### **ME 51300 - Engineering Acoustics**

Credit Hours: 3.00. The simple oscillator. Lumped acoustical elements. Electro-mechanical-acoustical analogies. Wave motion in strings and membranes. Introduction to linear acoustics through derivation of the wave equation and simple solutions. Plane and spherical waves. Acoustic intensity. Plane wave transmission through fluid layers and simple barriers. Sound absorption. Modeling of acoustical sources: monopoles, dipoles, quadrupoles. Mechanisms of sound generation and directionality. Sound propagation in one-dimensional systems (e.g., ducts and mufflers). Introduction to room acoustics. Typically offered Fall.

### **ME 51500 - Quality Control**

Credit Hours: 3.00. (ECE 51801). This course examines the design in order to acquire a better product/process quality. Other aspects of design included are robust design, parameter design, or Taguchi Techniques. This course also gives students a current understanding of the techniques and applications of design of experiments in quality engineering design. The students will learn design of quality control systems in manufacturing, use of advanced statistical process controls, sampling inspection techniques, process capability, and other statistical tools. Also included are vendor sourcing and control tools, methods for establishing specifications and tolerances, quality function deployment, and other quality control techniques. In addition, Six Sigma will be included. The course is aimed primarily to engineering graduate students interested in project management. Prerequisite: Basic Statistics. Typically offered Fall Spring Summer.

### **ME 51600 - Advanced Engineering Project Management**

**Prerequisite(s):** ME 3100 FOR LEVEL UG WITH MIN. GRADE OF C- OR ECE 31200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. (ECE 51600). Overview and concepts of project management (principles, body of knowledge, strategies); planning successful projects (defining, specifying, deliver options, scheduling, budgeting); implementing (organizing the team, work assignments, team building, team launch, effective leadership); risk analysis; executing (performance measurement, maintaining the schedule, adjustments/mid-course corrections, record keeping, status reporting, communications, managing conflict, time management); and closeout (performance measurement, maintaining the schedule, adjustments/ midcourse corrections, record keeping, status reporting, communications, managing conflict, time management). The course is aimed primarily to engineering graduate students interested in project management. Typically offered Fall Spring Summer.

### **ME 51900 - Introduction To Wind Energy**

**Prerequisite(s):** ME 31200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is intended for the undergraduate and graduate engineer or scientist who is interested in the wind energy technology; introduce the students to the technology and economics of converting wind energy to electricity and the environmental concerns of wind energy. Topics include: Introduction to renewable energy; Wind characteristics; Wind resource estimation; Wind Turbine aerodynamics; Wind energy system economics, Wind turbine siting and Environmental aspect and impact. Typically offered Fall Spring Summer.

**ME 52100 - Air Quality Modeling****Prerequisite(s):** ME 31200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is intended for the undergraduate and graduate engineer or scientist who is interested in the modeling of air pollution: the basic concepts of air quality and air pollution modeling; overview of practical and advanced approaches to air pollution modeling; evaluation and applications to air pollution related modeling. In order to obtain accurate assessments and forecasts of the effects of air contaminant dispersion, modeling based on solution of the nonlinear equations of fluid motion using Computational Fluid Dynamics (CFD) is a good choice. In this course, problems of engineering interest will be examined, related to both indoor and outdoor contaminant dispersion. Some of the homework problems will require use of a CFD code several source codes will be provided as well as access to commercial CFD codes. Typically offered Fall Spring Summer.

**ME 52300 - Electronics System Cooling****Prerequisite(s):** ME 41600 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This is an introduction to thermal analysis and management of electronic equipment with focus on cooling of electronic devices. The emphasis of this course is on the application of fundamental heat transfer principles to predict thermal load, temperature distribution, and hot-spot in electronics. Topics include: Introduction to various modes of heat transfer; Fins and heat sinks- design, analysis, and optimization; thermoelectric and refrigeration cooling; nanofluids, liquid cooling, boiling heat transfer and phase change thermal storage system; heat pipes; Analysis and design studies for chip modules, printed circuit boards; and trends in thermal packaging. The course is aimed primarily to ME graduate students specializing in thermal and fluid science area. Typically offered Fall Spring Summer.

**ME 52400 - Design And Analysis-Heating Ventilation And Air Conditioning****Prerequisite(s):** ME 41600 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course is an introduction to analysis and design of HVAC&R system. The emphasis is on the application of fundamental heat transfer and fluid mechanics principles to analyze HVAC systems. The topics covered includes: Introduction and basic concepts, Psychometrics, air conditioning systems, equipment selection, duct design and piping design. Heating and cooling loads, solar radiation and heat transmission in buildings. Heat pumps. Application of air conditioning to residences, computer rooms, light commercial and high-rise buildings. The course is aimed primarily to ME graduate students specializing in thermal and fluid science area. Typically offered Fall Spring Summer.

**ME 53200 - Statistical Concepts In Engineering**

Credit Hours: 3.00. (ECE 52501). This course is directed toward the graduate student who has never had a statistics course or whose last statistics course was taken some time ago and a refresher course is required. The primary purpose of this course is to provide a basic understanding of fundamental probability and statistical principles, their underlying assumptions, and their use in data analysis using real-world engineering problems. The course is aimed primarily to engineering graduate students interested in project management. Prerequisite: Graduate standing and proficiency in Calculus. Typically offered Fall Spring Summer.

**ME 53400 - System Engineering**

Credit Hours: 3.00. (ECE 52701). In today's environment, there is an ever-increasing need to develop and produce systems that are robust, reliable, high quality, supportable, cost-effective, and responsive to the needs of the customer or user. Reflecting these worldwide trends, System Engineering course introduces students to the full range of system engineering concepts, tools, and techniques, emphasizing the application of principles and concepts of system engineering and the way these principles aid in the development, utilization, and support of systems. The course covers systems engineering from both a technical and management perspective. The course is aimed primarily to engineering graduate students interested in project management. Typically offered Fall Spring Summer.

**ME 53600 - Numerical Methods In Engineering**

Credit Hours: 3.00. (ECE 50300) Numerical methods, solutions of equations of one variable, interpolation and polynomial approximation, numerical integration and differentiation, numerical solution of initial-value problems, solution of linear systems, iterative methods for solving linear systems, approximation theory, approximating eigenvalues, solutions of systems of nonlinear equations, boundary-value problems for ordinary differential equations, numerical methods for partial-differential equations. Typically offered Fall Spring Summer.

**ME 54300 - Advanced Engineering Economics****Prerequisite(s):** ME 31100 FOR LEVEL UG WITH MIN. GRADE OF C OR ECE 31200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Effective project managers have complete command of their project costs and a thorough understanding of the financial aspects of their business. This course reviews the fundamentals of accounting, examines project cost accounting principles, applications, and impact on profitability; examines the principles of project costing; covers the elements involved in cash management; introduces the framework for how projects are financed and the

potential impact financing has on the projects; and a framework for using an effective project cost system. This course is aimed primarily to engineering graduate students interested in project management. Typically offered Fall Spring Summer.

### **ME 56000 - Kinematics**

**Prerequisite(s):** ME 32000 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. Geometry of constrained plane motion with applications to linkage design. Type and number synthesis, size synthesis. Path curvature, inflection circle, cubic of stationary curvature. Finite displacements, three and four separated positions. Graphical, analytical, and computer techniques. Typically offered Fall.

### **ME 56300 - Mechanical Vibrations**

**Prerequisite(s):** CE 27300 FOR LEVEL UG WITH MIN. GRADE OF B- AND ME 32500 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. Review of systems with one degree of freedom. LaGrange's equations of motion for multiple degree of freedom systems. Introduction to matrix methods. Transfer functions for harmonic response, impulse response, and step response. Convolution integrals for response to arbitrary inputs. Principle frequencies and modes. Applications to critical speeds, measuring instruments, isolation, torsional systems. Introduction to nonlinear problems. Typically offered Fall.

### **ME 57500 - Theory And Design Of Control Systems**

Credit Hours: 3.00. Covers the analysis and design of control systems from both a classical and modern viewpoint, with emphasis on design of controllers. Classical control design is reviewed, including both root locus and Bode domain design methodologies. The state space representation is introduced, along with notions of stability, controllability, and observability. State feedback controllers for pole placement and state observers are discussed with emphasis in their frequency domain implications. Typically offered Fall.

### **ME 58700 - Engineering Optics**

Credit Hours: 3.00. Fundamentals of geometrical and physical optics as related to problems in engineering design and research. Characteristics of imaging systems; properties of light sources; optical properties of materials. Diffraction, interference, polarization, and scattering phenomena as related to optical measurement techniques. Introduction to lasers and holography. (Laboratory work can be undertaken for additional credit by special arrangement.). Typically offered Spring.

### **ME 59700 - Advanced Mechanical Engineering Projects I**

Credit Hours: 0.00 to 6.00. Projects or special topics of contemporary importance or of special interest that are outside the scope of the standard graduate curriculum can be studied under the Mechanical Engineering Projects course. Interested students should seek a faculty advisor by meeting with individual faculty members who work in their area of special interest and prepare a brief description of the work to be undertaken in cooperation with their advisor. Permission of instructor required. Typically offered Fall Spring Summer.

### **ME 66400 - Vibrations Of Continuous Systems**

Credit Hours: 3.00. Theory of small oscillations of continuous systems. Love's equations for thin shells, reduction to special cases of shallow shells, plates, beams, etc. Initial stresses; influence of shear; thermal excitation. Initial value problems; forced vibrations; structural damping. The dynamic Green's function, impedance concepts; variational approaches. Experimental procedures, scaling, composite, and stiffened shells. Prerequisite: knowledge of one degree of freedom system vibrations. Typically offered Spring.

### **ME 69800 - Research MS Thesis**

Credit Hours: 1.00 to 18.00. Research MS Thesis. Permission of instructor required. Typically offered Fall Spring Summer.

## **Mechanical Engineering Technology**

### **MET 10000 - Production Drawing And Computer-Aided Design**

Credit Hours: 3.00. This course is an introduction to technical graphics and computer-aided design. The course includes sketching, production drawing, and a significant amount of hands-on experience on a CAD system. The production drawing portion covers topics like multi-view drawings, section views, auxiliary views, and dimensioning. Typically offered Summer Fall Spring.

### **MET 10100 - Introduction To Mechanical Engineering Technology**

**Prerequisite(s):** MET 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 1.00. This course provides a general introduction to engineering and technology career perspectives. In addition, the course is designed to instill in a student the skills required to be successful in college. The primary objective is to retain first semester college students in the university community by building a link from past educational experiences to current educational opportunities. Typically offered Fall Spring.

### **MET 10101 - Introduction To Parametric Modeling**

**Prerequisite(s):** MET 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An introduction to three-dimensional parametric solid modeling, using industrial CAD software. Basic modeling features, assembly modeling, surface modeling, and generating drawings from models are covered. Typically offered Fall Spring Summer.

### **MET 10200 - Production Design And Specifications**

**Prerequisite(s):** (MET 10000 FOR LEVEL UG WITH MIN. GRADE OF D- OR CGT 11000 FOR LEVEL UG WITH MIN. GRADE OF D-) AND MET 16200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The design, evaluation, and documentation of engineering specifications required of manufacturability and assembly are introduced. Emphasis is on CAD-based details, assemblies, design layouts, equipment installations, and related industrial practices. Typically offered Fall Spring Summer.

### **MET 11100 - Applied Statics**

**Prerequisite(s):** MET 16200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Force systems, resultants and equilibrium, trusses, frames, beams, and shear and moments in beams are studied. Typically offered Fall Spring Summer.

### **MET 11800 - Applied Mechanics: Statics**

**Prerequisite(s):** MA 14800 FOR LEVEL UG WITH MIN. GRADE OF D- OR MA 15900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A study of force systems, resultants and equilibrium, centroids of areas and centers of gravity of bodies, trusses, frames, beams, friction and moments of inertia of areas and bodies. Typically offered Fall Spring Summer.

### **MET 12000 - Blueprint Reading And Sketching**

Credit Hours: 1.00. This introductory course will incorporate blueprint reading, freehand sketching, understanding orthographic projections, dimensioning and tolerancing, and the use of symbols in industrial drawings. Typically offered Fall Spring Summer.

### **MET 14100 - Materials I**

**Prerequisite(s):** MA 14700 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) OR MA 15300 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. An overview of structures, properties, and applications of metals, polymers, ceramics, and composites commonly used in industry is presented. Problem-solving skills are developed in the areas of materials selection, evaluation, measurement, and testing. Typically offered Fall Spring Summer.

### **MET 14200 - Manufacturing Processes I**

**Prerequisite(s):** MET 14100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Basic casting, forming, and joining processes are surveyed. The course emphasizes the selection and application of various processes. Typically offered Fall Spring Summer.

### **MET 16100 - Introduction To Engineering Technology**

Credit Hours: 1.00. This course will introduce engineering technology students to resources and skills that will help them to be successful in their studies and ultimately in their careers. This course will help students explore engineering technology by introducing campus, regional, and national resources such as professional societies in their chosen fields. It will also help students improve in areas important to becoming better students. These areas may include topics such as planning academic careers, mentoring, improving study skills, goal setting, and utilization of library resources. In addition, the course will focus on specific introductory concepts important to engineering technology students such as using campus computer resources and the TAC of ABET outcomes. Typically offered Fall Spring Summer.

### **MET 16200 - Computational Analysis Tools In MET**

Credit Hours: 1.00. Instruction is given in analytical and computational problem-solving techniques. The electronic calculator, the factor-label method of unit conversions, and engineering graphs are used to solve technical problems in mechanical engineering technology. Credit will not be granted for both MET 16000 and 16200. Typically offered Fall Spring.

### **MET 21100 - Applied Strength Of Materials**

**Prerequisite(s):** (MET 11800 FOR LEVEL UG WITH MIN. GRADE OF D- OR MET 11100 FOR LEVEL UG WITH MIN. GRADE OF D-) AND MA 16019 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 4.00. The principles of strength, stiffness, and stability are introduced and applied primarily to mechanical components. Typically offered Fall Spring Summer.

**MET 21300 - Dynamics**

**Prerequisite(s):** (MET 11100 FOR LEVEL UG WITH MIN. GRADE OF D- OR MET 11800 FOR LEVEL UG WITH MIN. GRADE OF D-) AND MA 16019 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. Kinematics and kinetics principles of rigid-body dynamics are introduced. Emphasis is on the analysis of bodies in plane motion. Typically offered Fall Spring Summer.

**MET 21400 - Machine Elements**

**Prerequisite(s):** MET 21100 FOR LEVEL UG WITH MIN. GRADE OF D- AND MET 21300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The methods developed in statics, dynamics, and strength of materials are applied to the selection of basic machine components. The fundamental principles required for the selection of individual elements that compose a machine are developed. Selected course topics are included as computer exercises. Typically offered Fall Spring.

**MET 21501 - Applied Machine Elements**

**Prerequisite(s):** MET 16100 FOR LEVEL UG WITH MIN. GRADE OF D- AND MET 21100 FOR LEVEL UG WITH MIN. GRADE OF D- AND MET 21300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The theories and methods developed in statics, dynamics, and strength of materials are applied to the selection of basic machine components. The course will develop the fundamental principles required for the selection of the individual elements of which a machine is composed. Typically offered Fall Spring.

**MET 22000 - Heat And Power**

**Prerequisite(s):** MA 22300 FOR LEVEL UG WITH MIN. GRADE OF D (MAY BE TAKEN CONCURRENTLY) AND MET 16200 FOR LEVEL UG WITH MIN. GRADE OF D AND (PHYS 21800 FOR LEVEL UG WITH MIN. GRADE OF D OR PHYS 22000 FOR LEVEL UG WITH MIN. GRADE OF D)

Credit Hours: 3.00. Heat/Power is an introduction to the principles of thermodynamics and heat transfer. Basic thermodynamic processes are used to evaluate the performance of energy-based systems such as internal combustion engines, power plants, and refrigeration equipment. Typically offered Fall Spring.

**MET 23000 - Fluid Power**

**Prerequisite(s):** PHYS 22000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course consists of the study of compressible and incompressible fluid statics and dynamics as applied to hydraulic and pneumatic pumps, motors, transmissions, and controls. Typically offered Fall Spring Summer.

**MET 24200 - Manufacturing Processes II**

**Prerequisite(s):** MET 14100 FOR LEVEL UG WITH MIN. GRADE OF D- AND (MET 16200 FOR LEVEL UG WITH MIN. GRADE OF D- OR MA 15400 FOR LEVEL UG WITH MIN. GRADE OF D-)

Credit Hours: 3.00. This course surveys the manufacturing processes and tools commonly used to convert cast, forged, molded, and wrought materials into finished products. It includes the basic mechanisms of material removal, measurement, quality control, assembly processes, cold forming, safety, process planning, and automated manufacturing. Typically offered Fall Spring.

**MET 29000 - Special Topics In MET**

Credit Hours: 1.00 to 3.00. Hours, subject matter, and credit to be arranged by faculty. Group instruction in new or specialty areas of Mechanical Engineering Technology is provided by MET faculty, subject to MET curriculum subcommittee approval. Typically offered Fall Spring Summer.

**MET 29900 - Mechanical Engineering Technology**

Credit Hours: 1.00 to 3.00. Independent project or laboratory work is conducted under the supervision of appropriate MET faculty. Hours and subject matter must be arranged by instructor and approved by MET curriculum subcommittee. Permission of instructor required. Typically offered Fall Spring Summer.

**MET 30200 - CAD In The Enterprise**

**Prerequisite(s):** MET 10200 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Theory and practice of management, use and integration of computer-aided design systems, and related engineering tools and practices are studied as they are applied in the industrial enterprise. Emphasis is on course projects. Typically offered Summer Fall Spring.

**MET 30300 - Automotive sports**

**Prerequisite(s):** MET 10200 FOR LEVEL UG WITH MIN. GRADE OF D-



Credit Hours: 1.00. This course is a one credit hour, per semester, course to be taken for up to three semesters. This course is designed to allow students to apply skills and knowledge learned, along with concurrent course material, to a defined project. The project can be chosen by the student or assigned by the instructor. The student will work on this project to develop and apply solutions to the project challenges or design and implement a new resolution. This course will allow students to explore new technologies that may not be covered in the MET program content. Typically offered Fall Spring Summer.

### **MET 30500 - Computer-Aided Design With Applications**

**Prerequisite(s):** MET 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course provides an advanced study of computer-aided drafting and design utilizing current industrial computer-aided design systems. The course covers the use of these systems in three dimensional and parametric modeling applications. Typically offered Fall Spring Summer.

### **MET 31100 - Experimental Strength Of Materials**

Credit Hours: 3.00. Selected advanced topics from the areas of mechanics of materials, structures, stress analysis, and strain measurements are considered. Basic electronic strain gage circuits and instrumentation are presented, with emphasis on transducer applications. Typically offered Spring.

### **MET 31300 - Applied Fluid Mechanics**

**Prerequisite(s):** MA 16121 FOR LEVEL UG WITH MIN. GRADE OF D- AND MET 23000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The fundamental principles of fluid mechanics are developed, including properties of fluid, pressure, hydrostatics, dynamics of fluid flow, friction losses, and sizing of pipes. Emphasis is on problem solving. Typically offered Fall Spring Summer.

### **MET 31500 - Applied Mechanism Kinematics And Dynamics**

**Prerequisite(s):** (CGT 11000 FOR LEVEL UG WITH MIN. GRADE OF C- OR CGT 16300 FOR LEVEL UG WITH MIN. GRADE OF C- OR IT 10500 FOR LEVEL UG WITH MIN. GRADE OF C-) AND (MET 21300 FOR LEVEL UG WITH MIN. GRADE OF C- OR MET 11300 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 3.00. Displacements, velocities, and accelerations are determined using graphical, semi-graphical, and numerical analyses of rotational and translational motions of common mechanisms such as linkages, cams, gears, screws, and chains as well as their loading.

### **MET 32000 - Applied Thermodynamics**

**Prerequisite(s):** MET 22000 FOR LEVEL UG WITH MIN. GRADE OF D AND MA 22300 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Following a review of fundamental concepts, advanced power and refrigeration cycles are analyzed. Applications such as gas mixtures, air-vapor mixtures, and chemical reactions of combustion processes are presented. Typically offered Fall Spring Summer.

### **MET 32500 - Applied Thermodynamics I**

**Prerequisite(s):** MA 21900 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHYS 22000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Applications of perfect gas laws, steam tables, principles of conservation of mass and energy, and heat transfer as they apply to power plants, engines, pumps, fans and refrigeration systems. Typically offered Fall Spring Summer.

### **MET 32900 - Applied Heat Transfer**

**Prerequisite(s):** PHYS 22000 FOR LEVEL UG WITH MIN. GRADE OF D- AND MA 21900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An applied approach to the introduction of basic vocabulary and concepts related to the steady state transfer (i.e. conduction, convection, radiation) will be covered. Additional topics will include heat exchangers, boilers and solar energy. Typically offered Fall Spring.

### **MET 33400 - Advanced Fluid Power**

Credit Hours: 3.00. Hydraulic and pneumatic circuits and their steady state and time variant behavior as it affects the selection and design of components and systems used in fluid power transmission and motion control are studied. Emphasis is placed on industrial and mobile applications, but the principles also apply to aerospace, marine, and other fluid power systems. Typically offered Fall Spring Summer.

### **MET 34400 - Materials II**

**Prerequisite(s):** MET 14100 FOR LEVEL UG WITH MIN. GRADE OF D AND MET 21100 FOR LEVEL UG WITH MIN. GRADE OF D AND CHM 11100 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Metals and polymers are studied. Topics include the bonding of atoms; the structures of crystals and polymers; the coldworking, alloying, and heat treating of metals; and the physical behavior of plastics. Course emphasis is on the development and control of material properties to meet engineering requirements and specifications. Typically offered Fall Spring Summer.

### **MET 34700 - Programming Of Automation Systems**

**Prerequisite(s):** MET 10200 FOR LEVEL UG WITH MIN. GRADE OF D- AND MET 24200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Study of fundamental concepts in computer numerical control (CNC) technology. Cutter centerline programming, cutter diameter compensation, tool nose radius (TNR) compensation, coordinate transformation, canned cycles, subprograms, user macros. The lab includes programming and operation of CNC turning and milling machines, CAD/CAM programming, and integration of design and manufacturing through computer network. Typically offered Fall.

### **MET 35500 - Automation I**

**Prerequisite(s):** ECET 35500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An introduction to the design and applications of programmable controller systems. Topics include programming techniques, input/output devices, personal computer interface, system design, safety and applications for automation. Typically offered Summer Fall Spring.

### **MET 38200 - Controls And Instrumentation For Automation**

**Prerequisite(s):** (PHYS 21900 FOR LEVEL UG WITH MIN. GRADE OF D OR PHYS 22100 FOR LEVEL UG WITH MIN. GRADE OF D) AND MA 22300 FOR LEVEL UG WITH MIN. GRADE OF D AND CNIT 17500 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Study of the procedures and techniques essential to industrial measurement and transmission of data is provided in the areas of microprocessor control, process control, and automated testing. Concepts of hysteresis, repeatability, weighted signals, span, suppression, range, and closed loop control are emphasized. Typically offered Fall Spring Summer.

### **MET 38400 - Instrumentation**

**Prerequisite(s):** MA 14800 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECET 21400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Study of measurement theory and principles, including temperature, pressure, level, flow and similar measurement used to control manufacturing processes. Typically offered Fall Spring Summer.

### **MET 40000 - Mechanical Design**

**Prerequisite(s):** CNIT 17500 FOR LEVEL UG WITH MIN. GRADE OF D AND MET 32000 FOR LEVEL UG WITH MIN. GRADE OF D AND MET 21400 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Theory and practice in mechanical design are presented. Modern design methodologies will be studied. The integrative methods discussed in this course reflect the current industry trend to perform product design and development in cross-functional teams. Emphasis is on multiple open-ended projects. Typically offered Fall Spring Summer.

### **MET 41100 - Introduction To The Finite Element Method**

**Prerequisite(s):** (PHYS 21900 FOR LEVEL UG WITH MIN. GRADE OF D OR PHYS 22100 FOR LEVEL UG WITH MIN. GRADE OF D) AND MA 22400 FOR LEVEL UG WITH MIN. GRADE OF D AND MET 21300 FOR LEVEL UG WITH MIN. GRADE OF D AND MET 21100 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. The finite element method is introduced, with emphasis on modeling and interpretation of results. Linear static problems are solved using commercial FEA software, and FEA results are verified through laboratory tests and/or theoretical calculations. Topics include trusses, frames, plane stress/strain, torsion, 3D structures, buckling, and natural frequency/mode shape analyses. Typically offered Fall Spring Summer.

### **MET 42000 - Machine Design**

**Prerequisite(s):** MET 21400 FOR LEVEL UG WITH MIN. GRADE OF D- AND ECET 26200 FOR LEVEL UG WITH MIN. GRADE OF D- OR MET 35500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Design of moving machinery in complex electro-mechanical systems. Several projects will be completed that include mechanical design and control design to obtain the desired specifications. Typically offered Summer Fall Spring.

### **MET 42100 - Air Conditioning And Refrigeration**

**Prerequisite(s):** MET 32900 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Heat gains and losses, heat-producing equipment, cooling, and refrigeration equipment are studied. System design is presented, including controls and instrumentation for commercial, industrial, and residential systems. Typically offered Fall Spring.

### **MET 42600 - Internal Combustion Engines**

Credit Hours: 3.00. The course deals with the fundamentals of internal combustion engines, with emphasis on performance, efficiency, and emissions. A comprehensive review of engine/vehicle operating systems is conducted. Related topics such as turbocharging, fuel oxygenates, lubrication, and computerized engine management are presented. Typically offered Fall Spring Summer.

### **MET 45100 - Manufacturing Quality Control**

**Prerequisite(s):** STAT 30100 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. (MFET 45100) Quality control practices used in manufacturing industries; management, statistical control charts, reliability, sampling plans, economics, computer methods, and test equipment are presented and applied. Credit will not be granted for both MET 45100 and MFET 45100. Typically offered Fall Spring Summer.

### **MET 46000 - Design for "X"**

**Prerequisite(s):** MET 21400 FOR LEVEL UG WITH MIN. GRADE OF D- AND MET 30500 FOR LEVEL UG WITH MIN. GRADE OF D- OR CGT 11600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Application of methods and techniques used in engineering, combined with statistical methods to develop quality, customer driven product development. The course will include topics in Design for Six Sigma, Design for Manufacturability, Design for Serviceability and product life cycles. The course will require students to work in teams. 3D solid modeling will be used to generate ideas and complete product development. Course projects will be taken from industry recognized student design competitions. Typically offered Summer Fall Spring.

### **MET 46100 - Computer Integrated Design And Manufacturing**

**Prerequisite(s):** MET 20500 FOR LEVEL UG WITH MIN. GRADE OF D- OR MET 10200 FOR LEVEL UG WITH MIN. GRADE OF D- AND MET 21100 FOR LEVEL UG WITH MIN. GRADE OF D- AND MET 24200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A combination of lecture and laboratory projects demonstrating the integration of all phases of a product's life cycle from conception through recycling. Laboratory projects include designing parts, graphical finite element analysis, rapid prototyping, computer controlled manufacturing, and testing all using a common, three dimensional graphical database. Typically offered Fall Spring Summer.

### **MET 46500 - Advanced Topics In Computer-Aided Design**

**Prerequisite(s):** MET 10000 FOR LEVEL UG WITH MIN. GRADE OF D- AND MET 20500 FOR LEVEL UG WITH MIN. GRADE OF D- OR MET 10200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This covers solid modeling and animation. These topics are built upon a foundation in computer modeling or CAD to produce photo realistic images as used in technical presentations, video, or film. Typically offered Fall Spring Summer.

### **MET 49000 - Special Topics In MET**

Credit Hours: 1.00 to 3.00. Group instruction in new or specialty areas of mechanical engineering technology is provided by MET faculty, subject to MET curriculum subcommittee approval. Hours, subject matter, and credit to be arranged by faculty. Typically offered Fall Spring Summer.

### **MET 49500 - Senior Project Survey**

**Prerequisite(s):** OLS 33100 FOR LEVEL UG WITH MIN. GRADE OF D- AND IET 30800 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Students will select several design projects and give written or oral reports on their proposed solutions. They will be encouraged to select and finalize one project proposal in preparation for MET 49700. Typically offered Fall Spring Summer.

### **MET 49700 - Senior Project**

**Prerequisite(s):** MET 49500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Directed work on individual projects for senior mechanical engineering technology students. Typically offered Fall Spring Summer.

### **MET 49900 - Mechanical Engineering Technology**

Credit Hours: 1.00 to 6.00. Independent project or study of a special topic is conducted under the supervision of appropriate MET faculty. Hours and subject matter must be arranged with the instructor and approved by the MET

curriculum subcommittee before enrolling in the course. Permission of instructor required. Typically offered Fall Spring Summer.

### **MET 52700 - Technology From A Global Perspective**

Credit Hours: 3.00. Introduction to the challenges faced by the practicing technologist when working and interacting with international technical personnel, both here and abroad, including history, standards, education, and practice of technology outside the United States. Typically offered Fall.

### **MET 53300 - Nanotechnology And Applications**

Credit Hours: 3.00. This course provides an insight to the underlying principles and applications of this emerging field of Nanotechnology. Participants will be introduced to the scientific principles and theory of nanoscale dimension and discusses the current and future Nanotechnology applications and research in different fields. Graduate student status or senior status with instructor approval. Graduate students with insufficient background may be required to take leveling courses. Typically offered Fall Spring Summer.

### **MET 58110 - Workshop In Mechanical Engineering Technology**

Credit Hours: 3.00. Advanced study of technical and professional topics. Emphasis is on new developments relating to technical, operational and training aspects of industry and technology education. May be offered classroom-based, online or hybrid or independent study. Permission of department required. Typically offered Fall Spring Summer.

### **MET 59010 - Independent Study In Mechanical Engineering Technology**

Credit Hours: 1.00 to 3.00. Independent study of a special problem under the guidance of a member of the staff. Does not substitute for either M.S. thesis or M.S. project credit. Prerequisite: Master's student standing. Permission of department required. Permission of instructor required. Typically offered Fall Spring Summer.

## **Mechatronics Engineering Technology**

### **MCET 21700 - Introduction To Process Control**

**Prerequisite(s):** ECET 10201 OR ECET 15401 OR ECET 21401

Credit Hours: 3.00. This course introduces fundamental concepts of process control systems, open-loop and closed-loop controls. Topics also included are: input output characteristics of process elements; dead time and span; switching analysis of process hardware; modeling of static and dynamic processes; diode, transistor and semi-conductor controlled rectifier (SCR) switching characteristics; measurements of electronic signals; solid-state switching devices; loading effects and power interfaces; noise and signal conditioning and grounding; cables and their characteristics; various industrial instrument interface buses, standards and practices. (Not open to students with credit in ECET 21700.) Typically offered Fall Spring Summer.

### **MCET 33000 - Industrial Programming And Networking**

**Prerequisite(s):** ECET 26200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course covers monitoring, controlling, and networking smart sensors, controllers, and final control elements. Also covered are: virtual instrumentation and programming mechatronics systems using graphical software tools; data transfer between industrial platforms, field buses for control application, bus control protocol, serial real-time communication systems (SERCOS) interface system; controller and smart sensor network; wireless network for process control applications; networking of multiple controller and communication among them for motion control applications; motion control programming, programming languages and tools for industrial Programmable Logic Controller (PLC) programming; PLC open, standardization in industrial programming, and IEC 61131-3; mathematical modeling of industrial devices and systems virtual environment. (Not open to students with credit in ECET 33000.) Typically offered Fall Spring Summer.

### **MCET 46200 - Application Of Computers In Process Control**

**Prerequisite(s):** MCET 21700 FOR LEVEL UG WITH MIN. GRADE OF C- OR ECET 36200 FOR LEVEL UG WITH MIN. GRADE OF C- OR ECET 21700 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course studies industrial process control systems. Topics include: continuous and discrete-state process control; analyzing process characteristics and controller tuning; closed loop control system characteristics, system stability, open loop and closed loop transient response; single, multivariable and cascade control systems; supervisory, direct computer control, and distributed control systems; virtual instrumentation and graphical software tools; analogies between electrical and mechanical systems; mathematical modeling of electromechanical systems; concepts of cam motion and inertia ratio; statistical process control (SPC); introduction to computer aided control software and hardware applied to process control. (Not open to students with credit in ECET 46200.) Typically offered Fall Spring Summer.

### **MCET 47200 - Programmable Logic Controllers For Advanced Mechatronics Applications**

**Prerequisite(s):** ECET 26200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course covers advanced instruction set for programmable logic controllers (PLC) that

includes: motion control, cam motion, product tracking, and other instructions necessary for packaging machinery applications. Other topics studied include: animations of packaging machinery systems using PLC emulators; advanced human-machine interface (HMI) layout design, configuration and interfacing HMI units with motion control PLCs; common industrial protocol (CIP) driven servomotor drives and their interface with motion control PLC; intelligent relays, PLC Input/output through CIP. Typically offered Fall Spring Summer.

### **MCET 48200 - Application Of Industrial Robots For Advanced Manufacturing**

**Prerequisite(s):** ECET 26200 FOR LEVEL UG WITH MIN. GRADE OF C- AND (MCET 21700 FOR LEVEL UG WITH MIN. GRADE OF C- OR ECET 21700 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 3.00. This course provides an overview of robot mechanisms, dynamics, and intelligent controls. Topics include: planar and spatial kinematics; motion planning; mechanism design for manipulators and mobile robots; multi-rigid-body dynamics, 3D graphic simulation, control design, actuators, and sensors; wireless networking, task modeling, human-machine interface, and embedded software; programming industrial robots, robot cell design, end of arm tooling (EOAT) design; robot coupling with high speed vision systems. Typically offered Fall Spring Summer.

## **Military Science and Leadership**

### **MSL 10100 - Foundations of Officership**

Credit Hours: 1.00 or 2.00. Examines the unique duties and responsibilities of officers. Discuss organization and role of the Army. Review basic life skills pertaining to fitness and communication. Analyze Army values and expected ethical behavior. Typically offered Fall.

### **MSL 10200 - Basic Leadership**

Credit Hours: 1.00 or 2.00. Presents fundamental leadership concepts and doctrine. Practice basic skills that underlie effective problem solving. Apply active listening and feedback skills. Examine factors that influence leader and group effectiveness. Examine the officer experience. Typically offered Spring.

### **MSL 12000 - Read Military Maps Survival Skills**

Credit Hours: 1.00. Fundamentals of reading and interpreting maps and aerial photographs, including marginal information, symbols, map orientation, military grid reference system, and terrain analysis. Application by planning movement of small groups, emphasizing problem solving and control. Typically offered Fall Spring.

### **MSL 20100 - Individual Leadership Studies**

Credit Hours: 2.00 or 3.00. Develops knowledge of self, self-confidence, and individual leadership skills. Develop problem solving and critical thinking skills. Apply communication, feedback, and conflict resolution skills. Typically offered Fall.

### **MSL 20200 - Leadership And Teamwork**

Credit Hours: 2.00 or 3.00. Focuses on self-development guided by knowledge of self and group processes. Challenges current beliefs, knowledge, and skills. Provides equivalent preparation for the ROTC Advanced Course and the Leader's Training Course. Typically offered Spring.

### **MSL 30100 - Leadership And Problem Solving**

Credit Hours: 3.00 or 4.00. Examines basic skills that underlie effective problem solving. Review the features and execution of the Leadership Development Program. Analyze military missions and plan military operations. Execute squad battle drills. Permission of department required. Typically offered Fall.

### **MSL 30200 - Leadership And Ethics**

Credit Hours: 3.00 or 4.00. Probes leader responsibilities that foster an ethical command climate. Develop cadet leadership competencies. Prepare for success at National Advanced Leadership Camp. Recognize leader responsibility to accommodate subordinate spiritual needs. Apply principles and techniques of effective written and oral communication. Permission of department required. Typically offered Spring.

### **MSL 39000 - Topics In Military History**

Credit Hours: 3.00. Topics in Military History course will give historical perspective into decisions made by American military leaders. The course also examines the external political and social environments within which the military, and in particular its leaders, operate. This course is required for ROTC cadets but is open for all students on campus. Students not a part of ROTC must have instructor consent. Typically offered Fall Spring.

### **MSL 40100 - Leadership And Management**

Credit Hours: 3.00 or 4.00. Builds on National Advanced Leadership Camp experience to solve organizational and staff problems. Discuss staff organization, functions, and processes. Examine principles of subordinate motivation and organizational change. Apply leadership and problem solving principles to a complex case study/simulation. Permission of department required. Typically offered Fall.

### **MSL 40200 - Officership**

Credit Hours: 3.00 or 4.00. Designed to explore topics relevant to second lieutenants entering the Army. Describe legal aspects of decision making and leadership. Analyze Army organization for operations from the tactical to strategic level. Assess administrative and logistics management functions. Permission of department required. Typically offered Spring.

### **MSL 49000 - Directed Studies In Military Science**

Credit Hours: 1.00 to 3.00. Individual readings, topics, or projects in military science appropriate for advanced undergraduate students. Permission of instructor required. Typically offered Fall Spring Summer.

## **Modeling, Simulation and Visualization**

### **MSV 56500 - High Performance Computing**

Credit Hours: 3.00. An introduction to High Performance Computing (HPC), with an emphasis on the programming and analysis aspects of HPC for the practicing scientist, engineer or technologist. This course will prepare students to analyze, design, implement and evaluate parallel algorithms and computer codes. This course will cover the motivation for parallel programming, a description and analysis of Amdahl's Law, and parallel-programming methodology. Shared-memory and distributed-memory concepts will be compared, and current programming application programming interfaces (APIs) will be covered. General knowledge of undergraduate mathematics, science, engineering or technology required. Course may be offered in traditional classroom-based, distance, or blended formats. Typically offered Fall Spring Summer.

### **MSV 56700 - Simulation Techniques**

Credit Hours: 3.00. An exploration of deterministic and stochastic simulation. Topics will include determining range of validity, boundary issues, managing complexity, optimization and parallelization of code, computational time management, adaptable meshes, fuzzy logic, and fidelity of simulation. Random number generation will also be covered for stochastic simulations. Examples and projects from a broad range of fields will be used. Course may be offered in classroom based, distance or hybrid formats. Typically offered Fall Spring Summer.

### **MSV 57500 - Software Project Management**

Credit Hours: 3.00. The factors influencing decision during the initiation, implementation, and termination of software projects are examined. Students work in project teams, using project management tools to develop implementation strategies, characterize contemporary technology projects, understand system perspective of projects, align projects with strategic objectives and learn advanced tools and techniques used in projects. Examples and case studies from a wide range of fields are utilized. Typically offered Fall Spring Summer.

### **MSV 57600 - Design And Analysis Of Simulation Experiments**

Credit Hours: 3.00. A review of currently accepted practices in design of simulation experiments, with validation and outcome analysis, and new techniques for model evaluation. Techniques covered may include methods for uncertainty quantification in deterministic models, design of experiments to match field experiments, data collection and sampling methods, data reduction methods, and imaging and statistical visualization. Course may be offered in classroom based, distance, or hybrid formats. Typically offered Fall Spring Summer.

### **MSV 57700 - Visualization Techniques**

Credit Hours: 3.00. In this course graduate students in technology fields and related disciplines will learn how to convey salient information about underlying data and processes for work involving data visualization. Topics covered include various visualization techniques, issues in visual analytics, perceptions and cognition, and application of visualization techniques to problems in technical fields and related disciplines. Course may be offered in classroom based, distance or hybrid formats. Typically offered Fall Spring Summer.

## **Music History and Theory**

### **MUS 20300 - Music For Elementary Teachers**

Credit Hours: 2.00. An undergraduate methods course to provide future teachers in the elementary school with the knowledge, skills, and resources necessary to enhance the regular classroom situation with meaningful and varied musical experiences, and to execute the same with confidence, creativity, and enthusiasm. Typically offered Fall Spring Summer.

### **MUS 25000 - Music Appreciation**

Credit Hours: 3.00. The traditions, forms, and styles of classical music. Other types of music may be examined as well. (Students may register through the Continuing Education Student Learning Center at the Tech Statewide locations via distance education.) Typically offered Fall Spring Summer. CTL:IFA 1330 Music Appreciation

### **MUS 29000 - Special Topics In Music**

Credit Hours: 1.00 to 3.00. Topics will vary.. Typically offered Fall Spring.

### **MUS 35500 - American Musical Theatre**

Credit Hours: 3.00. (THTR 355) A study of the origin, artistry, and unique qualities of the American musical theatre. Typically offered Fall Spring Summer.

### **MUS 36100 - Music Theory I**

Credit Hours: 3.00. Course comprises instruction in melodic and harmonic processes in tonal music; development of analytic, listening and piano techniques with musical equipment. Music reading ability is required, verified through Placement Exam. Typically offered Fall Spring.

### **MUS 36200 - Music Theory II**

**Prerequisite(s):** MUS 36100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A variety of styles and forms of music serve to exemplify melodic and harmonic processes and voice-leading practices in diatonic tonal music. Activities include analytic reading of musical scores, developing musical listening skills, and acquiring functional piano techniques. Typically offered Fall Spring.

### **MUS 36300 - Music Theory III**

**Prerequisite(s):** MUS 36200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Analytic study of art music and popular music representative of diatonic and chromatic tonal processes. Activities include analytic reading of musical scores, developing musical listening skills, and acquiring functional piano techniques. Creative applications are encouraged. Typically offered Fall.

### **MUS 37800 - Jazz History**

Credit Hours: 3.00. A historical and stylistic study of jazz. Typically offered Fall Spring.

### **MUS 39000 - Special Topics In Music**

Credit Hours: 1.00 to 3.00. Topics will vary. Typically offered Summer Fall Spring.

### **MUS 49000 - Guided Reading In Music**

Credit Hours: 1.00 to 6.00. For students with specialized needs and interests in the field. Permission of instructor required. Typically offered Fall Spring.

## **Nursing**

### **NUR 11800 - Perspectives In Nursing**

**Prerequisite(s):** NUR 12300 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 1.00. Introduction to contemporary nursing practice through exploration of nursing's historical development, legal and ethical aspects of the nurse/client relationship, and practice of the nursing role.. Typically offered Fall Spring.

### **NUR 11900 - Nursing Assessment**

**Prerequisite(s):** NUR 12300 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 2.00. Assessment techniques to establish a client data base are demonstrated and practiced. Techniques of interviewing, inspection, auscultation and selected palpation are presented as the methods used to determine client health status.. Typically offered Fall Spring.

### **NUR 12300 - Nursing Foundations**

**Prerequisite(s):** (NUR 11900 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) OR NUR 21900 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) ) AND BIOL 21300 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND PCTX 20100 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 5.00. The nursing process is utilized as the framework for promotion of client health in the context of human needs maintenance/fulfillment. The concepts of holistic client care and client adaptation along the health-illness continuum are emphasized. . Typically offered Summer Fall Spring.

### **NUR 12500 - Career Transition To Associate Degree Nursing**

Credit Hours: 3.00. The differences between the LPN and ADN roles are discussed. The nursing process is utilized to establish plans of care and the teaching/learning process is employed to develop teaching plans for clients. The role components of the associate degree are explored.. Typically offered Fall Spring.

### **NUR 18100 - Introduction To Professional Nursing**

Credit Hours: 1.00. This course is designed to examine nursing within its professional context. The heritage and tradition of professional nursing is explored as a foundation to understanding contemporary nursing. Scholarly writing and research is introduced using APA format. Strategies are given to help students achieve academic success. Typically offered Summer Fall Spring.

### **NUR 18200 - Conceptual And Theoretical Thinking In Nursing**

**Prerequisite(s):** NUR 18100 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 2.00. This course examines the concepts that form the philosophical and theoretical basis of nursing science and patient centered care. The content is leveled to provide undergraduate students a foundational understanding of nursing as a discipline and profession. The conceptual framework and philosophy of the school of nursing will be studied. Special emphasis will be placed on the relationship between nursing philosophy, knowledge, research, and practice. Typically offered Summer Fall Spring.

### **NUR 18800 - Foundations Of Physical Assessment**

**Prerequisite(s):** BIOL 21400 FOR LEVEL UG WITH MIN. GRADE OF C AND BIOL 21300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Foundational principles of physical assessment are examined in the context of patient centered care. A systematic approach to physical assessment of individuals across the life span is introduced. Health promotion, evidence based practice, and critical thinking are presented as foundational to physical assessment. Typically offered Summer Fall Spring.

### **NUR 19200 - Foundations Of Nursing**

**Prerequisite(s):** CHM 11900 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 18100 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND BIOL 21400 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 2.00. The nursing process is introduced as a systematic approach to patient centered care. The concepts of basic human needs and evidence based nursing practice are presented as foundational to the curriculum. Typically offered Summer Fall Spring.

### **NUR 19201 - Foundations of Nursing**

**Prerequisite(s):** NUR 18200 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NUR 18800 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NUR 19600 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 4.00. This course develops foundational nursing knowledge and skills. The nursing process is introduced as a systematic approach to patient centered care. The concepts of basic human needs and evidence-based practice are presented as foundational to the curriculum. In addition, this course serves as the foundational clinical practicum incorporating principles of physical assessment, psychosocial nursing and nursing fundamentals to the clinical setting. Critical thinking skills are developed as students learn to apply the nursing process to provide patient centered care in order to meet the basic human needs to adult individuals. Clinically appropriate psychomotor skills are learned and reinforced. Typically offered Fall Spring.

### **NUR 19600 - Foundations Of Psychosocial Nursing**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Foundational principles of psychosocial nursing are taught in the context of patient centered care. Emphasis is placed on concepts of life span development, basic human needs, therapeutic relationships and therapeutic communication. The elemental components of evidence based nursing practice are introduced. Typically offered Fall Spring.

### **NUR 19700 - Practicum I**

**Prerequisite(s):** NUR 19200 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 19600 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 18800 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 2.00. This course is the foundational clinical practicum incorporating principles of assessment, psychosocial nursing and nursing fundamentals to the clinical setting. Critical thinking skills are developed as students learn to apply the nursing process to provide patient centered care in order to meet the basic human needs of adult individuals. Clinically appropriate psychomotor skills are learned and reinforced. Typically offered Summer Fall Spring.

### **NUR 20100 - Pathophysiology For Nursing Practice**

**Prerequisite(s):** (NUR 12300 FOR LEVEL UG WITH MIN. GRADE OF C OR NUR 22300 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 3.00. This course examines the pathophysiology of the major regulatory mechanisms of the body. Theory and evidence-based practices are emphasized. Diagnostic procedures and therapeutic regimens will be discussed. Typically offered Summer Fall Spring.

### **NUR 20400 - Psychosocial Health Nursing**

**Prerequisite(s):** NUR 36710 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 22300 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 27200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 4.00. This course develops knowledge and skills required for psychosocial health nursing. Theory and evidence-based health care practices are emphasized. Nursing practice experiences are provided in a variety of settings. Typically offered Summer Fall Spring.

### **NUR 20800 - Lifespan Human Development**



Credit Hours: 2.00. A study of the continuity of development throughout the lifespan to gain an understanding of the influences of heredity, environment, and culture on individuals and families. Nursing implications of normative and non-normative patterns of growth are identified. Typically offered Fall Spring.

### **NUR 21400 - Introduction To Pathophysiology**

**Prerequisite(s):** BIOL 21400 FOR LEVEL UG WITH MIN. GRADE OF C AND BIOL 21300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An introduction to pathophysiological alterations in major regulatory mechanisms of the body. Provides a foundation for understanding general nursing practice, various diagnostic procedures, and selected therapeutic regimens. Typically offered Summer Fall Spring.

### **NUR 21800 - Human Development And Health Promotion**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. (HST 21800) This course develops the knowledge required to effectively promote health throughout the lifespan. Theory and evidence-based developmental influences and challenges are addressed. Corequisite: Admission to the Nursing Program. Typically offered Summer Fall Spring.

### **NUR 21900 - Health Assessment**

**Prerequisite(s):** NUR 22210 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course develops knowledge and skills required for health assessment in nursing practice. Current practice guidelines are emphasized. Interview and assessment skills are utilized to determine health status across the lifespan. Typically offered Summer Fall Spring.

### **NUR 22200 - Foundations Of Holistic Health And Wellness**

Credit Hours: 3.00. This course examines the foundations of health and wellness from a holistic perspective. Theoretical foundations and modality techniques of complementary and alternative medicine (CAM) will be discussed and practiced to attain optimal well-being. Typically offered Fall Spring Summer.

### **NUR 22210 - Foundations Of Nursing**

**Prerequisite(s):** NUR 27100 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NUR 21900 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NUR 34700 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 4.00. This course provides an introduction to basic concepts related to foundational nursing practice. Typically offered Fall Spring Summer.

### **NUR 22300 - Foundations Of Nursing Practice**

**Prerequisite(s):** NUR 22210 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 21900 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 27200 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 5.00. This course develops foundational nursing knowledge and skills. Theory and evidence-based health care practices are emphasized. Nursing practice experiences are provided in a variety of settings. Typically offered Summer Fall Spring.

### **NUR 23000 - Personal Expression In Nursing**

Credit Hours: 1.00. Personal expression through verbal and nonverbal communications is explored. The process of communicating thoughts and information effectively is emphasized.. Typically offered Fall Spring.

### **NUR 23100 - Nursing Care Of Developing Families**

**Prerequisite(s):** (NUR 11900 FOR LEVEL UG WITH MIN. GRADE OF C OR NUR 21900 FOR LEVEL UG WITH MIN. GRADE OF C) AND NUR 12300 FOR LEVEL UG WITH MIN. GRADE OF C AND (PCTX 20100 FOR LEVEL UG WITH MIN. GRADE OF C OR NUR 27100 FOR LEVEL UG WITH MIN. GRADE OF C) AND (NUR 20800 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) OR NUR 21800 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) ) AND BIOL 21400 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. The nursing process is utilized to assist individual members of childbearing and childrearing families toward the promotion of optimal health. Health promotion and protective measures related to childbearing, childrearing and family dynamics are emphasized. Clinical experiences are provided in a variety of settings.. Typically offered Summer Fall Spring.

### **NUR 23200 - Nursing Care Of Infants, Children & Adolescents**

**Prerequisite(s):** (NUR 11900 FOR LEVEL UG WITH MIN. GRADE OF C OR NUR 21900 FOR LEVEL UG WITH MIN. GRADE OF C) AND NUR 12300 FOR LEVEL UG WITH MIN. GRADE OF C AND (PCTX 20100 FOR LEVEL UG WITH MIN. GRADE OF C OR NUR 27100 FOR LEVEL UG WITH MIN. GRADE OF C) AND (BIOL

22100 FOR LEVEL UG WITH MIN. GRADE OF C OR BIOL 22100 FOR LEVEL UG WITH MIN. GRADE OF TR) AND (NUR 20800 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) OR NUR 21800 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) ) AND (NUR 21400 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) OR NUR 20100 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) OR NUR 27200 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) ) AND BIOL 22100 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. The nursing process is utilized to assist individual clients toward the promotion of optimal health during the periods of infancy, childhood, and adolescence. Health promotion and supportive measures are emphasized. Clinical experiences are provided in a variety of settings.. Typically offered Fall Spring Summer.

### **NUR 23300 - Nursing Care Of Adults**

**Prerequisite(s):** (NUR 11900 FOR LEVEL UG WITH MIN. GRADE OF C OR NUR 21900 FOR LEVEL UG WITH MIN. GRADE OF C) AND NUR 12300 FOR LEVEL UG WITH MIN. GRADE OF C AND (PCTX 20100 FOR LEVEL UG WITH MIN. GRADE OF C OR NUR 27100 FOR LEVEL UG WITH MIN. GRADE OF C) AND (NUR 21400 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) OR NUR 20100 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) OR NUR 27200 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) ) AND (BIOL 22100 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) OR BIOL 22100 FOR LEVEL UG WITH MIN. GRADE OF TR)

Credit Hours: 4.00. The nursing process is utilized to assist individual adult clients toward the promotion of optimal health. Health needs/problems of adulthood are emphasized. Experiences in a variety of clinical settings are provided. Typically offered Fall Spring Summer.

### **NUR 23400 - Psychosocial Nursing Care**

**Prerequisite(s):** (NUR 11900 FOR LEVEL UG WITH MIN. GRADE OF C OR NUR 21900 FOR LEVEL UG WITH MIN. GRADE OF C) AND NUR 12300 FOR LEVEL UG WITH MIN. GRADE OF C AND BIOL 21400 FOR LEVEL UG WITH MIN. GRADE OF C AND PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND (NUR 20100 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) OR NUR 27200 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) ) OR NUR 21400 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND (NUR 20800 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) OR NUR 21800 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) )

Credit Hours: 3.00. The nursing process is utilized to assist individuals experiencing dysfunctional interactions in order to achieve optimal health. Therapeutic modalities that reduce dysfunctional thoughts, feeling, or behaviors are emphasized. Clinical experiences are provided in a variety of settings.. Typically offered Summer Fall Spring.

### **NUR 23500 - Nursing Issues**

**Prerequisite(s):** NUR 11800 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 1.00. Nursing, health care, and societal issues are explored. Legal and ethical problems confronting contemporary nursing practice are examined.. Typically offered Fall Spring.

### **NUR 23600 - Transition To Nursing Practice**

**Prerequisite(s):** NUR 23500 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NUR 11800 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 23000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 1.00. The role transition from nursing student to graduate nurse is explored in relation to employment expectations and role responsibilities. Personal accountability as a practicing member within the discipline of nursing is emphasized.. Typically offered Fall Spring.

### **NUR 23700 - Nursing Synthesis**

**Prerequisite(s):** (NUR 20100 FOR LEVEL UG WITH MIN. GRADE OF C OR NUR 21400 FOR LEVEL UG WITH MIN. GRADE OF C OR NUR 27200 FOR LEVEL UG WITH MIN. GRADE OF C) AND NUR 23300 FOR LEVEL UG WITH MIN. GRADE OF C AND (BIOL 22100 FOR LEVEL UG WITH MIN. GRADE OF C OR BIOL 22100 FOR LEVEL UG WITH MIN. GRADE OF TR) AND FN 30300 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NUR 23100 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NUR 23200 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NUR 23400 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND (NUR 23000 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NUR 23500 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN

CONCURRENTLY) AND NUR 23600 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) OR NUR 10700 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) )

Credit Hours: 6.00. Nursing process is utilized to assist clients toward the promotion of optimal health within their contextual environment. Nursing care and client care management of adults with complex health care needs/problems are emphasized. Clinical experiences are provided in a variety of settings. Typically offered Summer Fall Spring.

### **NUR 27100 - Pathophysiology And Pharmacology I**

Credit Hours: 3.00. This course introduces theory guided evidence-based pathophysiological and pharmacological aspects of illness and disease in the systems of neurological, musculoskeletal, metabolic, endocrine, fluid and electrolyte, gastrointestinal, hematologic, and immunologic. Typically offered Fall Spring Summer.

### **NUR 27200 - Pathophysiology And Pharmacology II**

**Prerequisite(s):** NUR 27100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course introduces theory guided evidence-based pathophysiological and pharmacological aspects of illness and disease in the systems of integumentary, respiratory, cardiovascular, renal, sensorineural, and oncologic. Typically offered Fall Spring Summer.

### **NUR 27400 - Essential Pharmacokinetics For Nursing**

**Prerequisite(s):** CHM 11900 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 2.00. The nursing process is utilized as a systematic approach to the safe and accurate administration of medications: Dosage calculations, basic pharmacokinetics, safety implications, and use of critical thinking are emphasized. Typically offered Summer Fall Spring.

### **NUR 27500 - Alternative Therapies For Nursing Practice**

Credit Hours: 2.00. This course focuses on a range of options that complement Western biomedical health care. Ancient and contemporary practices throughout the world are explored in the context of culture, understanding that other cultures and countries have valid ways of preventing and curing diseases. Emphasis is placed on the integration and balance of body, mind, and spirit. The evidence basis of complimentary and alternative therapies is incorporated into the course. Typically offered Summer Fall Spring.

### **NUR 28200 - Adult Nursing I**

**Prerequisite(s):** NUR 19700 FOR LEVEL UG WITH MIN. GRADE OF C AND BIOL 21400 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 27400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 4.00. This course builds on the foundational nursing courses. Concepts of health promotion, maintenance, restoration and palliation will be utilized to focus on patient centered care in the adult population. Evidence based practice will guide the nursing process to address basic human needs. Typically offered Summer Fall Spring.

### **NUR 28201 - Adult Health I**

**Prerequisite(s):** NUR 19201 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 29400 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 41500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 5.00. This course builds on the foundational nursing courses. Concepts of health promotion, maintenance, restoration and palliation will be utilized to focus on person-centered care in the adult population. Evidence based practice will guide the nursing process to address basic human needs in a variety of clinical settings. Typically offered Fall Spring.

### **NUR 28300 - Practicum II**

**Prerequisite(s):** NUR 19700 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 28200 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 2.00. Practicum II is the second clinical course in a series of three practica. Clinical lab experiences emphasize application of the nursing process in the direct care of adult individuals with an emphasis on health promotion, health restoration, health maintenance, and palliation. Patient centered care related to basic human needs is implemented utilizing critical thinking and evidence based nursing practice. Typically offered Summer Fall Spring.

### **NUR 28600 - Mental Health Nursing**

**Prerequisite(s):** NUR 19600 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Building on the foundations of psychosocial nursing, this course advocates for autonomy of clients in the least restrictive environment. A commitment to social justice for those who experience discrimination on the basis of their mental illness is emphasized. Evidence based nursing practice provides the structure for supporting

clients' and families' strengths and adaptation when faced with pathology and dysfunction. The focus is on interpersonal and communication skills critical to every area of nursing practice. Typically offered Summer Fall Spring.

### **NUR 28700 - Mental Health Practicum**

Credit Hours: 1.00. Building on the theoretical knowledge of Mental Health Nursing, this course provides both structured and unstructured clinical experiences with individuals and families experiencing mental disorders. The focus is on mental health promotion, mental health restoration, and mental health maintenance. Using current evidence, patient centered care is based on the analysis of individual clients' psychodynamics and psychoeducational needs. Interpersonal and communication skills are utilized to help clients attain their personally defined quality of life.

Typically offered Summer Fall Spring.

### **NUR 29400 - Essential Pharmacotherapeutics For Nursing**

**Prerequisite(s):** NUR 19201 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. A systematic approach is used to examine the pharmacotherapeutics and the administration of common prescription and non-prescription medications across the lifespan. Emphasis is placed on nursing responsibilities related to ongoing assessment of drug effects, analysis of corresponding diagnostic data, and evidence based interventions with individuals receiving drug therapy. Typically offered Summer Fall Spring.

### **NUR 31700 - Nursing Care Of Women Through The Lifespan**

**Prerequisite(s):** NUR 28201 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. Building on previous curricular concepts this course focuses on principles of health promotion, health maintenance, health restoration and palliation, specifically applied to the female patient. Students further develop critical thinking skills by planning developmentally appropriate patient and family centered care. Students utilize best available evidence when implementing the nursing process with female patients and their families.

Typically offered Summer Fall Spring.

### **NUR 31800 - Maternity Practicum**

**Prerequisite(s):** NUR 28201 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NUR 31700 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 1.00. Building on the theoretical knowledge of Nursing Care of Women Throughout the Lifespan this provides structured clinical experiences with women and their families during the childbearing experience. Evidence based nursing practice is utilized to assist families as they progress through the childbearing experience. The teaching learning process is used to assist childbearing families meet basic needs of the developing family. Typically offered Summer Fall Spring.

### **NUR 32500 - Philosophy And Theory Of Nursing**

Credit Hours: 3.00. Philosophical assumptions and values, nursing theories, ethical frameworks, legal principles, and nursing traditions are synthesized, culminating in the articulation of a personal philosophy of nursing by students.

Methodologies that foster analysis and critical thinking, encourage dialectic, and promote self-evaluation are utilized.

Typically offered Summer Fall Spring.

### **NUR 32510 - Eastern Energy Healing And Spirituality**

Credit Hours: 3.00. Explore energy healing and spirituality concepts based on eastern philosophies or religions.

Develop and practice energy healing and spirituality modalities to enhance well being by promoting health, reducing stress, and achieving harmony in life. Typically offered Fall Spring Summer.

### **NUR 32700 - Gerontology: Healthcare Concepts**

Credit Hours: 2.00. Course focuses on normal aging. Relevant findings from the gerontology literature are discussed as they apply to older adults. Ethical/legal issues related to older adults are discussed. Typically offered Fall Spring.

### **NUR 33000 - Human Sexuality Nursing Implications**

Credit Hours: 3.00. Human Sexuality Nursing Implications. Typically offered Fall Spring Summer.

### **NUR 33100 - RN Transition To Professional Nursing**

Credit Hours: 3.00. This course provides for the discussion of practice roles, responsibilities, and involvement in baccalaureate nursing. Conceptual frameworks, critical components of professional nursing practice, and issues pertinent to the changing health care environment are explored. Typically offered Summer Fall Spring.

### **NUR 33300 - Adult Health Nursing I**

**Prerequisite(s):** NUR 22300 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 27200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 5.00. This course develops knowledge and skills required for adult health nursing roles. Theory and evidence-based health care practices are emphasized. Nursing practice experiences are provided in a variety of settings. Typically offered Summer Fall Spring.

### **NUR 33500 - Women And Newborn Health Nursing**

**Prerequisite(s):** NUR 36710 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 4.00. This course develops the knowledge and skills required for women and newborn health nursing. Theory and evidence-based health care practices are emphasized. Nursing practice experiences are provided in a variety of settings. Typically offered Summer Fall Spring.

### **NUR 34700 - Nursing Theory And Research I**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) OR GS 19100 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. This course develops fundamental knowledge of theory and research in nursing. Various nursing theories will be presented. The research process will be reviewed. Typically offered Summer Fall Spring.

### **NUR 34900 - Contemporary Trends In Health Care Systems**

Credit Hours: 3.00. This course provides an overview of the contemporary health care system in the United States. Cultural and ethnic diversity, and health beliefs and practices are emphasized. The influence of global health care systems on the US health care system is explored. Permission of department required. Typically offered Summer Fall Spring.

### **NUR 35200 - Nursing Care Of Older Adults**

Credit Hours: 1.00. This course examines concepts related to basic human needs specific to older adults. Evidence based health care practices that exhibit patient centered care related to health promotion, maintenance, restoration and palliation are examined. Ethical and legal dilemmas impacting the lifestyle of older adults are presented. Emphasis is placed on promoting positive attitudes of the professional nurse in caring for older adults. Typically offered Summer Fall Spring.

### **NUR 35300 - Health Care Informatics**

Credit Hours: 3.00. (HST 35300) A comprehensive approach to information technology is examined. Major concepts in health care informatics, trends, innovative strategies, and applications are introduced. Permission of department required. Typically offered Fall Spring Summer.

### **NUR 35500 - Applied Thanatology**

Credit Hours: 3.00. Exploration of the basic needs of the dying individual and the family. Identification of the appropriate and supportive nursing intervention within a social and cultural framework will enable students to better appreciate and apply various psychological therapeutic interventions for the client and the family resulting in better coping and/or adaptive behaviors within the system.. Typically offered Fall Spring.

### **NUR 35600 - Nursing Leadership**

Credit Hours: 3.00. Nursing Leadership. Typically offered Fall Spring Summer.

### **NUR 35700 - Nursing Theory And Research II**

**Prerequisite(s):** NUR 34700 FOR LEVEL UG WITH MIN. GRADE OF C AND STAT 30100 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. This course develops critical thinking skills required for the application of theory and research in nursing. The contribution of theory and research in evidence-based practice will be discussed. Typically offered Summer Fall Spring.

### **NUR 35800 - Cultural Diversity Related To Illness**

Credit Hours: 3.00. Cultural Diversity Related To Illness. Typically offered Fall Spring.

### **NUR 36100 - Pediatric Nursing**

**Prerequisite(s):** NUR 37200 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NUR 39201 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 2.00 or 3.00. Building on previous curricular concepts this course focuses on principles of health maintenance, health restoration and palliation specifically applied to the pediatric patient. Students further develop critical thinking skills by planning developmentally appropriate patient and family centered care. Students utilize best available evidence when implementing the nursing process with pediatric patients. Permission of department required. Typically offered Fall Spring Summer.

### **NUR 36710 - Nursing Theory And Research**

**Prerequisite(s):** STAT 21300 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) OR STAT 30100 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. This course develops critical thinking skills required for the application of theory and research in nursing. The contribution of theory and research in evidence-based practice will be discussed. Permission of department required. Typically offered Fall Spring Summer.

### **NUR 37200 - Pediatric Nursing Practicum**

**Prerequisite(s):** NUR 36100 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NUR 39201 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 1.00. This clinical provides patient care experience that support the application of the nursing process in the provision of patient centered care to children and families. These experiences are provided in acute and chronic settings. Developmentally appropriate, evidence based nursing care is practiced. Typically offered Summer Fall Spring.

### **NUR 37800 - Growing Old In A New Age**

Credit Hours: 3.00. Concepts and issues of aging are explored to enhance the understanding of the impact of aging on society. The processes of aging and old age as stages of life are identified.. Typically offered Fall Spring.

### **NUR 38400 - Concepts Of Role Development In Professional Nursing**

**Prerequisite(s):** NUR 19700 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course examines professional nursing roles and professional nursing standards of practice within the context of structured and unstructured settings. Concepts and issues pertinent to the current environmental of professional nursing practice are discussed. Personal and professional values that provide a focus for evolving professional socialization are explored. Typically offered Summer Fall Spring.

### **NUR 38800 - Nursing Of Families And Groups**

**Prerequisite(s):** NUR 28600 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 18200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Theoretical frameworks and the nursing process are utilized to support the basic needs, promote the health of families and groups, and facilitate the development of group leadership skills. Typically offered Summer Fall Spring.

### **NUR 38900 - Family Health Nursing**

**Prerequisite(s):** NUR 33500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Community concepts and theories related to families and groups are introduced. Traditional therapeutic intervention and emerging community-nurse strategies to promote health and quality of life are explored. Families and groups experiencing disabilities and issues related to quality of life for elder adults are included. Typically offered Summer Fall Spring.

### **NUR 39000 - Nursing Research**

**Prerequisite(s):** BHS 20100 FOR LEVEL UG WITH MIN. GRADE OF C OR SOC 38200 FOR LEVEL UG WITH MIN. GRADE OF C OR STAT 30100 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 19201 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. This course examines the research process and use of research based evidence as a foundation for nursing. A review of both quantitative and qualitative methodologies will be incorporated. Distinguishing among non-research based primary and meta-sources of evidence will be emphasized. Critical thinking skills will be used to read and evaluate published research. Typically offered Summer Fall Spring.

### **NUR 39100 - Professional Ethics**

**Prerequisite(s):** NUR 19201 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 2.00. Theoretical and practical applications of ethical principles are applied to nursing and patient centered care. Particular attention is given to the ideas of advocacy, autonomy, and authority in beginning professional nursing practice. Typically offered Summer Fall Spring.

### **NUR 39200 - Adult Nursing II**

**Prerequisite(s):** NUR 28300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Continuing to build on the core concepts introduced in Adult Nursing I evidence based nursing practice is utilized as an approach to patient centered care with adult individuals seeking health. Concepts relative to basic human needs are emphasized. Typically offered Summer Fall Spring.

### **NUR 39201 - Adult Health II**

**Prerequisite(s):** NUR 28201 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 5.00. Continuing to build on curricular concepts introduced in Adult Health I, evidence based practice is utilized as an approach to person centered care of adults with complex health problems in a variety of healthcare settings. Concepts relative to basic human needs are emphasized. Typically offered Fall Spring Summer.

### **NUR 39300 - Practicum III**

**Prerequisite(s):** NUR 28300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Practicum III is the third clinical course in a series of three practica. Clinical lab experiences involve the provision of evidence based, patient centered, nursing care to individuals and small groups of adults with complex medical problems. Building on the complexity of the role of the nurse, the concepts of time management, prioritization, delegation, and collaboration are introduced with practical application in the clinical setting. Typically offered Summer Fall Spring.

### **NUR 39400 - Health Promotion And Education**

**Prerequisite(s):** NUR 18800 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 19201 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. The role of the nurse as a health educator is implemented. Nursing and non-nursing theories related to health promotion and teaching-learning processes are examined. Principles of health literacy related to patient education are emphasized. Evidence-based nursing projects related to health education within a community environment are implemented. Typically offered Summer Fall Spring.

### **NUR 39500 - Children's Health Nursing**

**Prerequisite(s):** NUR 44300 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 4.00. This course develops knowledge and skills required for child health nursing. Theory and evidence-based health care practices are emphasized. Nursing practice experiences are provided in a variety of settings. Typically offered Summer Fall Spring.

### **NUR 39700 - Nursing Care Of The Aged, Disabled and Chronically Ill**

**Prerequisite(s):** NUR 28201 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Basic human needs of the aged, person's living with chronic health problems and/or disabilities are introduced. Principles of health promotion, health restoration and palliation are examined. Evidenced based nursing practice is emphasized within the context of patient centered care. Typically offered Summer Fall Spring.

### **NUR 39900 - Special Topics**

Credit Hours: 0.00 to 3.00. Hours, credit, and subject matter to be arranged by faculty. Typically offered Fall Spring.

### **NUR 41500 - Pathophysiology**

**Prerequisite(s):** BIOL 21300 FOR LEVEL UG WITH MIN. GRADE OF C AND BIOL 21400 FOR LEVEL UG WITH MIN. GRADE OF C AND BIOL 22100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. The most common morbidity problems manifested throughout the lifespan are studied. Pathophysiologic concepts and physiologic responses are integrated with the nursing process. The application of evidence based nursing practice modalities provides a basis to address basic human needs. Typically offered Fall Spring Summer.

### **NUR 41600 - Nursing Research**

Credit Hours: 3.00. Explore the research process as a foundation for understanding, evaluating, and applying nursing research. An overview of research, its purpose, and approaches to solving research problems are examined. Typically offered Fall.

### **NUR 42100 - Nursing Practicum: Community And Leadership**

**Prerequisite(s):** NUR 38900 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 39500 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 44300 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 43900 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NUR 48900 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. This course develops knowledge and skills required for nursing leadership and community health nursing. Theory and evidence-based health care practices are emphasized. Nursing leadership and community practice experiences are provided to populations in a variety of settings. Typically offered Fall, Spring, Summer.

### **NUR 42900 - Community Health Nursing**

**Prerequisite(s):** NUR 38900 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 44300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 5.00. This course develops knowledge and skills required for community health nursing. Theory and evidence-based health care practices are emphasized. Nursing practice experiences are provided to populations in a variety of settings. Typically offered Summer Fall Spring.

### **NUR 43800 - Nursing Management And Leadership**

Credit Hours: 6.00. This course provides students with the opportunity to synthesize previous learning and develop knowledge and skills required for management and leadership roles within a dynamic health care system. Evidence-based health care practices and organizational quality improvement models are discussed. Experiences are provided in a variety of health care settings. Typically offered Summer Fall Spring.

**NUR 43900 - Nursing Management And Leadership****Prerequisite(s):** NUR 44300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course develops knowledge and skills required for nursing management and leadership roles. Theory and evidence-based health care practices are emphasized. Typically offered Summer Fall Spring.

**NUR 44300 - Adult Health Nursing II****Prerequisite(s):** NUR 33300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 5.00. This course continues the development of knowledge and skills required for adult health nursing roles. Theory and evidence-based health care practices are emphasized. Nursing practice experiences are provided in a variety of settings. Typically offered Summer Fall Spring.

**NUR 44700 - Capstone In Holistic Health And Wellness**

Credit Hours: 1.00 to 3.00. This course serves as the culminating experience in holistic health and wellness. The course provides opportunities for students to integrate previous learning experiences with the program goals. Typically offered Fall Spring Summer.

**NUR 44800 - Holistic Health And Wellness: Stress Management**

Credit Hours: 3.00. This course uses Chen's "Conformity with Nature" theory as a theoretical foundation for developing and implementing stress management strategies. This theory is developed from Eastern philosophy, culture and medicine. Stress management techniques and skills will be practiced. Typically offered Fall Spring Summer.

**NUR 45100 - Nursing Informatics****Prerequisite(s):** NUR 19201 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course provides a basic understanding of nursing science, computer science, and information science to prepare students to effectively and efficiently use technology to identify, collect, process, and manage health care information. A focus on technology based health applications which support clinical, administrative, research, and educational decision-making to enhance the efficacy of nursing is provided. Permission of department required. Typically offered Fall Spring Summer.

**NUR 45200 - Quality And Safety In Professional Nursing Practice****Prerequisite(s):** NUR 28201 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. Using a project-management focus, this course provides students the opportunity to synthesize and apply previous knowledge related to: patient-centered care, teamwork and collaboration, evidence-based practice, quality improvement, and safety in a professional leadership role. Permission of department required. Typically offered Fall Spring Summer.

**NUR 48200 - Nursing Leadership And Management****Prerequisite(s):** NUR 28201 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 2.00 or 3.00. Theories and evidence based practice related to leadership, organization and management are examined. Specific strategies for effective time management, priority setting, decision making, career planning and delegation are introduced. Approaches to the evaluation of quality nursing practice within a complex work environment are discussed. Typically offered Summer Fall Spring.

**NUR 48300 - Community And Public Health Nursing****Prerequisite(s):** NUR 39000 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NUR 38800 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NUR 39400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 4.00. Concepts of community and public health nursing are introduced. Community health nursing roles related to evidence based practice, leadership, collaboration, quality improvement and political activism are explored. Critical thinking skills are applied in the assessment of vulnerable populations existing within various communities. The reciprocal influence of the environment on the patient, family and community relative to human needs is emphasized. Permission of department required. Typically offered Fall Spring Summer.

**NUR 48500 - Community Health Nursing Practicum I****Prerequisite(s):** NUR 39300 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 39700 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 48600 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. This community health practicum emphasizes integration of professional nursing roles and community health concepts. Evidence based nursing practice is utilized as an approach to patient centered care with patients throughout the lifespan. Emphasis is placed on health promotion, health restoration, health maintenance or



palliation within community based settings. The reciprocal influence of the environment on the patient, family and community relative to human needs is emphasized. Typically offered Summer Fall Spring.

### **NUR 48600 - Community Health Nursing**

**Prerequisite(s):** NUR 38800 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 39000 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 39400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Concepts of community and community health nursing are introduced. Community health nursing roles related to evidence based practice, leadership, collaboration; quality improvement and political activism are explored. Critical thinking skills are applied in the assessment of a community and its potential for meeting the basic human needs of its constituents. Typically offered Summer Fall Spring.

### **NUR 48601 - Community Health Nursing**

**Prerequisite(s):** NUR 39201 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 39700 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 35200 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 36100 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NUR 37200 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NUR 31700 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NUR 31800 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 6.00. This course provides the knowledge and skills required for community health nursing. Theory and evidence-based practice are emphasized. Critical thinking is applied in the assessment of a community and in analyzing its ability to meet the health needs of its members. Nursing roles and functions are developed through experiences provided to populations in a variety of settings. Typically offered Fall Spring Summer.

### **NUR 48701 - Transitions Into Professional Nursing Practice**

Credit Hours: 2.00. This two credit hour course prepares senior nursing students with the knowledge, skills and attitudes necessary to effectively prepare for transition from the role of student to entry level nurse. Specifically, test-taking strategies and practice, NCLEX preparation and licensure application will be addressed. Permission of department required. Typically offered Fall Spring Summer.

### **NUR 48900 - Community Health Nursing**

**Prerequisite(s):** NUR 38900 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 39500 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 44300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Concepts of community, community change, epidemiology, biostatistics and community health nursing are introduced. Nursing roles related to practice, teaching, research utilization, and leadership/management in the community are explored. Assessment of a community and its potential for facilitating health and quality of life is examined. Typically offered Fall.

### **NUR 49300 - Advanced Adult Health Nursing**

**Prerequisite(s):** NUR 44300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 6.00. This course develops advanced knowledge and skills required for adult health nursing roles. Theory and evidence-based health care practices are emphasized, focusing on complex health needs. Nursing practice experiences are provided in a variety of settings. Typically offered Summer Fall Spring Summer.

### **NUR 49301 - Adult Health III**

**Prerequisite(s):** NUR 39201 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 48601 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 6.00. A continuation of Adult Health I and II, this advanced medical surgical course develops advanced knowledge and skills required to provide safe and quality care for adults with complex health alterations. Evidence-based health care practices are emphasized. Nursing clinical experiences are provided in a variety of settings focusing on the care of multiple adult patients with high acuity. Typically offered Fall Spring.

### **NUR 49500 - Baccalaureate Nursing Capstone**

**Prerequisite(s):** NUR 42900 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 43900 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 2.00. This course synthesizes concepts, theories, and research from nursing and other disciplines. Students will transition to practice as a beginning baccalaureate nurse with a preceptor. A mandatory NCLEX-RN review course and satisfactory completion of a department exit exam is required. Typically offered Summer Fall Spring Summer.

### **NUR 49600 - RN-BS Nursing Capstone**

**Prerequisite(s):** (NUR 35700 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND NUR 43900 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) ) OR (NUR

32500 FOR LEVEL UG WITH MIN. GRADE OF C AND NUR 41600 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 3.00. This course provides the opportunity to integrate concepts, theories, and research from nursing and other disciplines to develop and improve practice. There is a focus on concepts and roles of management and leadership within a health care system under the guidance of a practicing nurse leader. Typically offered Summer Fall Spring.

### **NUR 49800 - Capstone Course In Nursing**

Credit Hours: 3.00. In collaboration with a nursing faculty and clinical liaison, students will plan and implement an evidence-based project consistent with the professional leadership role. Students will use critical thinking skills and evidence based practice to promote patient centered nursing in a health care environment of work complexities. This course will culminate with an evidence-based project that will be presented to peers and the academic community. Permission of department required. Typically offered Summer Fall Spring.

### **NUR 50000 - Theoretical Constructs In Nursing**

**Prerequisite(s):** NUR 50100 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 3.00. This course examines the integration of theory/conceptual relationships in the development of nursing knowledge. Students explore ways in which nurses in advanced practice incorporate theoretical knowledge in the implementation of the advanced practice in nursing role. Students analyze the clinical relevance of mid-range and practice theories. Students examine the relationship of theoretical constructs to research and praxis through concept analysis, theory evaluation, and discussion of the application of theory to practice. This course examines ways in which theoretical thought is embedded in evidence-based nursing practice. Typically offered Fall Spring Summer.

### **NUR 50100 - Foundations Of Advanced Practice In Nursing**

Credit Hours: 2.00. This course builds on the knowledge and experiences that students possess when beginning their advanced practice in nursing education. Students explore their assumptions about advanced practice in nursing, its historical context and definitions of the various advanced practice roles, conceptual underpinnings and role competencies. Students develop an appreciation for how evidence based practice influences advanced practice in nursing. They develop skills that include using information communication technologies, identifying problems, posing questions that lead to evidence sources, searching and differentiating among various sources and types of evidence. Typically offered Fall Spring Summer.

### **NUR 50200 - Pharmacotherapeutics for Advanced Practice Nursing**

**Prerequisite(s):** NUR 50700 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 3.00. Course includes pharmacodynamics, pharmacokinetics, and pharmacotherapeutics of broad categories of pharmacologic agents. Students apply these principles and also consider the role of best available evidence and patient preferences as a basis for managing pharmacologic regimens. Students review regulations relevant to prescriptive authority for advanced practice nurses. Typically offered Fall Spring Summer.

### **NUR 50300 - Advanced Health Assessment**

**Prerequisite(s):** NUR 50100 FOR LEVEL GR WITH MIN. GRADE OF B AND NUR 50200 FOR LEVEL GR WITH MIN. GRADE OF B (MAY BE TAKEN CONCURRENTLY) AND NUR 50500 FOR LEVEL GR WITH MIN. GRADE OF B (MAY BE TAKEN CONCURRENTLY) AND NUR 50700 FOR LEVEL GR WITH MIN. GRADE OF B (MAY BE TAKEN CONCURRENTLY) AND NUR 51000 FOR LEVEL GR WITH MIN. GRADE OF B (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00 (West Lafayette, Fort Wayne) 4.00 (Calumet) Students develop advanced, evidence-based health assessment skills that build on their current knowledge and abilities. Major concepts of the course include comprehensive and focused history taking and advanced physical assessment. Students relate underlying physiologic mechanisms with normal and abnormal findings from the history and physical assessment. The course provides a basis for designing a culturally sensitive and evidence-based plan of care within the situational context of the individual. Typically offered Fall Spring.

### **NUR 50500 - Sociocultural Influences On Health**

Credit Hours: 2.00 or 3.00. This course examines the influences of cultural and sub-cultural variables on health and health care delivery. Students analyze and apply appropriate theoretical perspectives and current research to design evidence-based strategies that ground clinical decision making in advanced practice nursing. Students use the National Standards on Culturally and Linguistically Appropriate Services (CLAS) as the basis for providing culturally competent care. As students apply principles of culturally competent communication they are encouraged to develop insight and an attitude of resistance to stereotyping. Students gain an understanding of the context of vulnerable and marginalized populations through the analysis of social, cultural, and economic influences that impact health and illness. Typically offered Fall Spring Summer.

### **NUR 50700 - Physiologic Concepts For Advanced Practice Nursing**

**Prerequisite(s):** NUR 50100 FOR LEVEL GR WITH MIN. GRADE OF B (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 4.00. Students examine the principles of physiologic function at all levels of organization from cells to

organ systems as they affect human function. The course uses homeostasis as a model to account for regulatory and compensatory functions in health. Students develop the necessary theoretical and empirical foundation for subsequent understanding of the diagnosis and management of human responses to disease and non-disease based etiologies. Typically offered Summer Fall Spring.

### **NUR 51000 - Research And Evidence Based Nursing Practice**

**Prerequisite(s):** PSY 50000 FOR LEVEL GR WITH MIN. GRADE OF B AND NUR 50100 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 3.00. This course focuses on both the generation of primary evidence through an in-depth examination of the research process and its critical use in evidence based practice. Students systematically search, appraise and interpret the best available evidence that informs advanced practice nursing and health related disciplines. Typically offered Summer Fall Spring.

### **NUR 51100 - Health Promotion For Advanced Practice In Nursing**

**Prerequisite(s):** NUR 50300 FOR LEVEL GR WITH MIN. GRADE OF B AND NUR 51000 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 2.00 or 3.00. Students analyze health promotion/disease prevention, and health education frameworks combined with best available evidence as a foundation for advanced practice in nursing. Students promote the health of diverse client populations by incorporating the Healthy People goals, clinical practice guidelines, risk assessment, epidemiological data and evidence based screening tools into nursing practice. In collaboration with selected clients and/or families, students implement health coaching/teaching through the integration of family, health promotion and health literacy theories. Typically offered Fall Spring Summer.

### **NUR 52500 - Informatics In Nursing**

Credit Hours: 3.00. Integrates nursing science with computer technology and information science to identify, gather, and manage information. Emphasis on technology based health applications with support clinical, administrative, research, and educational decision making enhancing the efficacy of nursing endeavors. Typically offered Summer Fall Spring.

### **NUR 52700 - Ethics For Nurses In Advanced Practice**

Credit Hours: 3.00. The focus of this course is on moral dilemmas and ethical implications occurring in a variety of contexts. Students explore both theoretical and pragmatic viewpoints of dilemmas as they relate to the role of nurses in advanced practice. Content includes the historical, theoretical, contextual and practical aspects of ethical nursing practice, as well as the application of ethical frameworks, concepts, and principles. Typically offered Fall Spring Summer.

### **NUR 53100 - Theoretical And Ethical Reasoning In Advanced Practice Nursing**

Credit Hours: 3.00. This course examines the integration of theory/conceptual relationships, ethical frameworks and decision making in the development of advanced practice. The course is underpinned with the Ways of Knowing framework. Students hone reasoning skills through exploration of historical, theoretical, contextual, and practical aspects of theoretical and ethical nursing practice. Students examine the relationship of theoretical constructs to research and praxis through concept analysis, theory evaluation, ethical dilemmas analysis, and discussion of the application of theory to practice. Ways in which theoretical and ethical thought is imbedded in evident-based nursing practice is discussed. Typically offered Spring Summer.

### **NUR 55500 - Health Disparities: Care Of Vulnerable Populations**

Credit Hours: 3.00. Prepares the advanced practice nurse to address and find solutions for vulnerable populations and individuals in the health-care system. Students investigate and analyze current issues and health-care policies, focusing on health disparities that impact vulnerable people. The advanced practice nurse examines the legal and ethical aspects of managing the health care of disparate individuals, families, and groups. Permission of department required. Typically offered Fall Spring Summer.

### **NUR 57400 - Pathophysiologic Concepts For Advanced Practice Nursing I**

Credit Hours: 3.00. Students examine the principles of physiologic and pathophysiologic function at all levels of organization from cells to organs, systems and the human organism. They apply these physiologic and pathophysiologic concepts to understand how illness and disease alter cell and organ/system function that lead to clinical manifestations. The course uses homeostasis as a model to account for regulatory and compensatory functions in health and illness across the lifespan. Students develop the necessary theoretical and empirical foundation of subsequent understanding of the diagnosis and management of integrated human responses to disease and aging. This course is one of a two-semester series; this term concepts covered include dynamic regulation, cell structure and function, genetics and genomics, altered cell proliferation, host defense/immunopathology, nervous regulation/dysfunction, movement and integrative function and dysfunction. Typically offered Fall.

### **NUR 57500 - Pathophysiologic Concepts For Advanced Practice Nursing II**

Credit Hours: 3.00. Students examine the principles of physiologic and pathophysiologic function at all levels of organization from cells to organs, systems and the human organism. They apply these physiologic and

pathophysiologic concepts to understand how illness and disease alter cell and organ/system function that lead to clinical manifestations. The course uses homeostasis as a model to account for regulatory and compensatory functions in health and illness across the lifespan. Students develop the necessary theoretical and empirical foundation of subsequent understanding of the diagnosis and management of integrated human responses to disease and aging. This course is one of a two-semester series; this term concepts covered include disorders of blood and lymph, cardiovascular pulmonary function and dysfunction, reproductive health and disease, hormone regulation and endocrine disease, nutrition and elimination, and renal function and dysfunction. Typically offered Fall.

### **NUR 59900 - Special Topics/Independent Study In Nursing**

Credit Hours: 0.00 to 6.00 (West Lafayette, Calumet) 1.00 to 6.00 (Fort Wayne) Special topics in nursing are critically examined. Hours, credit, and subject matter are determined by the staff. Permission of instructor required. Typically offered Spring Fall Summer.

### **NUR 60000 - Adult-Gerontology Clinical Nurse Specialist I**

**Prerequisite(s):** NUR 50000 FOR LEVEL GR WITH MIN. GRADE OF B AND NUR 51100 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 3.00. Students analyze theory and evidence to design clinical nurse specialist care for youngest to oldest adult patients across the wellness to illness continuum. Students use problem-solving and evidence-based practice methodologies to diagnose, plan and evaluate interventions for select disease and illness phenomena. The focus is on analyzing etiologies of symptoms and functional problems, using evidence-based and theoretically sound advanced nursing interventions and assessment of associated outcomes of practice. Students develop clinical nurse specialist competencies necessary to manage the complexities of youngest to oldest adults as they transition through multiple contexts of care such as healthcare settings and wellness to illness trajectories. Typically offered Fall.

### **NUR 60100 - Adult-Gerontology Clinical Nurse Specialist Practicum I**

**Prerequisite(s):** NUR 50000 FOR LEVEL GR WITH MIN. GRADE OF B AND NUR 51100 FOR LEVEL GR WITH MIN. GRADE OF B AND NUR 60000 FOR LEVEL GR WITH MIN. GRADE OF B (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. Students apply advanced knowledge of theory and evidence based practice to care for youngest to oldest adult patients across the wellness/illness continuum. Students apply skills related to holistically assessing health/symptoms, promoting health, and managing illness and responses to disease. In addition to direct care activities focused on the adult-gerontology population, students develop skills related to consultation, collaboration, coaching, and leadership within the healthcare system. Students also use problem-solving methods based on a synthesis of theoretical and empirical evidence to advance nursing care of youngest to oldest adult patients. Typically offered Fall.

### **NUR 60200 - Critical Care Clinical Nurse Specialist I**

**Prerequisite(s):** NUR 50000 FOR LEVEL GR WITH MIN. GRADE OF B AND NUR 51100 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 3.00. Students analyze theory and research related to the patient/client sphere of influence in order to design care for patients with critical illness. Students use problem-solving and evidence-based practice methodologies to diagnose, plan, and evaluate interventions for select disease and nondisease-based phenomena. The focus is on understanding etiologies of symptoms and functional problems, the need for intervention, and associated outcomes of practice. Typically offered Fall.

### **NUR 60300 - Critical Care Clinical Nurse Specialist Practicum I**

**Prerequisite(s):** NUR 50000 FOR LEVEL GR WITH MIN. GRADE OF B AND NUR 51100 FOR LEVEL GR WITH MIN. GRADE OF B AND NUR 60200 FOR LEVEL GR WITH MIN. GRADE OF B (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 2.00. Students apply advanced knowledge of theory and research to care for patients/clients with critical illness who require the care of a clinical nurse specialist. Students use problem-solving methodologies based on synthesis of theoretical and empirical evidence to advance nursing care of patients/clients. Students participate in direct and indirect care activities that impact nurse-sensitive patient/client outcomes. Typically offered Fall.

### **NUR 61100 - Primary Care Of The Young Family**

**Prerequisite(s):** NUR 50000 FOR LEVEL GR WITH MIN. GRADE OF B AND NUR 51100 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 3.00. Prepares family nurse practitioner students to assume responsibility for the coordination and delivery of culturally appropriate health services to childbearing and childrearing families. Students apply theory and research to the management of pregnancy, well-child care, stable chronic conditions, and acute episodic illnesses commonly encountered in primary care settings. The course emphasizes a sound conceptual basis for practice and an appreciation for evidence-based care. Students continue to integrate health promotion and health maintenance into the primary care of young families. Typically offered Fall Spring Summer.

### **NUR 61300 - Primary Care Of The Young Family Practicum**

**Prerequisite(s):** NUR 50000 FOR LEVEL GR WITH MIN. GRADE OF B AND NUR 51100 FOR LEVEL GR WITH MIN. GRADE OF B AND NUR 61100 FOR LEVEL GR WITH MIN. GRADE OF B (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. Students progress in their ability to master the competencies of the family nurse practitioner, using critical thinking and diagnostic reasoning skills. Students apply knowledge of clinical research, pharmacology, physiology, and conceptual frameworks to the primary care of childbearing and childrearing clients and families.

Prerequisite: NUR 50000, 51100. Typically offered Fall Spring Summer.

### **NUR 61800 - Adult-Gerontology Clinical Nurse Specialist II**

**Prerequisite(s):** NUR 60000 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 3.00. Students analyze theories and evidence related to nursing personnel and organizational spheres of influence relevant to the wellness to illness spectrum of care of the youngest to oldest adult patients. Students develop clinical nurse specialist competencies related to nursing personnel, other healthcare providers and organizations. The emphasis is on using evidence-informed problem solving and evaluation methodologies to address nursing care and organizational issues. Students continue to generate evidence-based and theoretically sound advanced nursing interventions for the youngest to oldest adults as the basis of nursing care within the context of complex adaptive systems. Typically offered Spring.

### **NUR 62000 - Adult-Gerontology Clinical Nurse Specialist Practicum II**

**Prerequisite(s):** NUR 60100 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 3.00. Students apply advanced knowledge of theory and evidence based practice to manage the care for youngest to oldest adult patients across the wellness/illness continuum. Students continue to advance their skills related to holistic assessment, health promotion, and illness/disease management to effectively transition patients into and out of the acute care setting. In addition to direct patient management, students focus on developing professional role competencies related to nursing personnel and the healthcare organization. Students provide consultation to and collaborate with nurses and other healthcare providers within the organization. They also initiate the change process within the organization and identify and articulate ethical/legal concerns at the patient, nurse, organization, and community levels. Finally, students use systematic assessment and evaluation methodologies to identify problems and evaluate outcomes among youngest to oldest adult patients across the wellness/illness continuum. Typically offered Spring.

### **NUR 62200 - Primary Care Of The Aging Family**

**Prerequisite(s):** NUR 61100 FOR LEVEL GR WITH MIN. GRADE OF B AND NUR 61300 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 3.00. Prepares family nurse practitioner students to assume responsibility for the coordination and delivery of culturally appropriate health services to middle-aged and older families. Students learn to manage stable chronic conditions and acute episodic illnesses commonly encountered in primary care settings. The course emphasizes the conceptual basis for practice and an appreciation for evidence-based care. Students continue to integrate health promotion and health maintenance into the primary care of older clients and their families. Typically offered Fall Spring Summer.

### **NUR 62300 - Primary Care Of The Aging Family Practicum**

**Prerequisite(s):** NUR 61300 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 3.00. Students progress in their ability to master the competencies of the family nurse practitioner, using critical thinking and diagnostic reasoning skills. Students apply knowledge of clinical research, pharmacology, physiology, and conceptual frameworks to the primary care of middle-aged and older clients and families. Prerequisite: NUR 61300. Typically offered Spring Fall Summer.

### **NUR 63000 - Critical Care Clinical Nurse Specialist II**

**Prerequisite(s):** NUR 60200 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 3.00. Students analyze theories and research related to critical care nursing personnel and organizational spheres of influence. Clinical nurse specialist competencies focused toward nursing personnel and other healthcare providers and organizations are addressed. The emphasis is on using problem-solving and evaluation methodologies that address nursing care and organizational issues. Typically offered Spring.

### **NUR 63500 - Critical Care Clinical Nurse Specialist Practicum II**

**Prerequisite(s):** NUR 60300 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 2.00. Students apply theories and research related to critical care nursing personnel and organizational spheres of influence. Students begin to develop professional role competencies related to nursing personnel and the

healthcare organization. Students use systematic assessment and evaluation methodologies to identify problems and evaluate outcomes. Typically offered Spring.

### **NUR 65000 - Concepts For The Nurse Executive Creating An Environment For Professional Practice**

Credit Hours: 3.00. Examines and applies the fundamental constructs of transformational leadership for the nurse executive. Focuses on attaining a thorough understanding and ability to operationalize ideas and concepts that will guide each student's knowledge development, critical thinking related to leading and managing others. Prerequisites: NUR 52100. Typically offered Fall Spring Summer.

### **NUR 65100 - Role Of The Nurse Executive In Creating An Environment For Professional Practice**

Credit Hours: 3.00. Building on the concepts learned in NUR 65000, examines processes by which the nurse executive creates an environment for professional nursing practice. Examines the technologies involved in an executive leadership role that includes, strategic planning, business planning, care delivery models, quality management, customer service models, team development, managing interdisciplinary relationships, evaluation systems, clinical promotion strategies, and nurse retention strategies. The role of the nurse executive in the management of regulatory agencies and risk management is analyzed. Prerequisites: NUR 52100 and 65000. Typically offered Fall Spring.

### **NUR 65200 - Role Of The Nurse Executive In Managing Nursing Practice**

Credit Hours: 3.00. Examination of administrative processes; business practices; and technologies in relation to the professional role of the nurse leader. Focuses on understanding and developing skills in patient safety, leading others, and problem solving. Processes and technologies addressed during the semester include: interpersonal skills, monitoring and addressing nursing concerns, recruiting, orienting and retaining nursing staff; work re-design and re-engineering to improve practice environments; monitoring and evaluating nursing practice; certification, working on teams, promoting a positive image of nursing, dealing with toxic individuals, coaching and mentoring, performing an investigation, evaluation, and corrective action. Prerequisites: NUR 65000 and NUR 65100. Typically offered Fall Spring.

### **NUR 65300 - Healthcare Financial Management**

Credit Hours: 3.00. This course examines the financial management responsibilities of the nurse administrator. Course content focuses on understanding and operationalizing the processes associated with cost accounting, cost volume, profit analysis, healthcare budgets, and financial informatics. Typically offered Summer.

### **NUR 65500 - Advanced Practice In Nursing Seminar**

**Prerequisite(s):** (NUR 60100 FOR LEVEL GR WITH MIN. GRADE OF B AND NUR 60300 FOR LEVEL GR WITH MIN. GRADE OF B AND NUR 61300 FOR LEVEL GR WITH MIN. GRADE OF B) OR NUR 62300 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 1.00. Students analyze movements and trends that influence advanced practice in nursing. Students dialogue with peers on issues related to advanced practice, nursing as a profession and discipline, healthcare and other related topics of interest. Prerequisite: NUR 60100, 60300 or 61300. Typically offered Fall Spring.

### **NUR 65600 - Healthcare Organization, Policy and Economics**

**Prerequisite(s):** NUR 50100 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 3.00. Students use theories to understand the various models that influence health care policy and organize health care delivery. Students investigate the processes of analyzing and forming health policy. The reciprocal relationship between evidence-based practice and health care policy is explored. Students examine health care economics from a micro and macro perspective and their impact on health care delivery systems. Students also explore issues such access to health care, health care quality, and cost. Prerequisite: NUR 50100. Typically offered Fall Spring Summer.

### **NUR 65700 - FNP Practicum: Clinical Synthesis**

**Prerequisite(s):** NUR 62200 FOR LEVEL GR WITH MIN. GRADE OF B AND NUR 62300 FOR LEVEL GR WITH MIN. GRADE OF B AND NUR 65600 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 2.00. This is the final clinical capstone course in a sequence of clinical courses designed to prepare graduate nursing students for FNP practice. Students synthesize and apply theoretical and empirical knowledge in primary-care settings with culturally diverse clients and families. Emphasis is given to the clinical management of a wider spectrum of clients and to the more complex, co-morbid conditions seen in family practice. Prerequisite: NUR 62300, Corequisite: NUR 65500, 65600. Typically offered Summer Fall Spring.

### **NUR 65800 - Adult-Gerontology Clinical Nurse Specialist Practicum III: Clinical Synthesis**

**Prerequisite(s):** NUR 62000 FOR LEVEL GR WITH MIN. GRADE OF B AND NUR 65600 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 2.00. Students further develop skill in applying theory and evidence related to managing the care of youngest to oldest adult patients across the wellness/illness continuum and influencing nursing personnel and healthcare systems. Students continue to expand professional role competencies related to all of the spheres of adult-gerontology clinical nurse specialist influence. Students continue to use systematic assessment and evaluation methodologies for the purpose of identifying problems and evaluating outcomes among youngest to oldest adult patients across the wellness/illness continuum. Typically Summer.

### **NUR 65900 - Critical Care Clinical Nurse Specialist Practicum III: Clinical Synthesis**

**Prerequisite(s):** NUR 63500 FOR LEVEL GR WITH MIN. GRADE OF B- AND NUR 65500 FOR LEVEL GR WITH MIN. GRADE OF B- (MAY BE TAKEN CONCURRENTLY) AND NUR 65600 FOR LEVEL GR WITH MIN. GRADE OF B- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 2.00. Students further develop skill in applying theories and research related to managing the care of critical care patients and influencing critical care nursing personnel and organizations. Students continue to expand professional role competencies related to all of the spheres of influence. Students identify problems and evaluate the outcomes of care with respect to patients, nursing personnel, and organizations, using systematic assessment and evaluation methodologies. Typically offered Summer Fall.

### **NUR 66000 - Curriculum Development In Nursing**

**Prerequisite(s):** NUR 50000 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 3.00. This course is designed to introduce the student to nursing curriculum design, theory and course structure applicable to a variety of academic setting. Students will explore the internal and external influences on nursing curriculum. In addition, students will create a nursing curriculum and evaluation plan. Typically offered Fall Spring Summer.

### **NUR 66100 - Theories And Principles Of Teaching And Learning In Nursing Education**

Credit Hours: 3.00. Students explore historical and contemporary philosophical perspectives in teaching/learning in the context of nursing education. Theories and models that inform theory guided, evidence-based teaching are analyzed and critiqued. An in-depth analysis of principles of web based instruction, change theory, attributes of adult learners and different learning styles occur. The role of culture, ethics and leadership in the context of teaching/learning is explored. Prerequisites: Pre or Co-Requisite: NUR 66000 or NUR 66300. Typically offered Fall Spring Summer.

### **NUR 66200 - Teaching Strategies For Nursing**

**Prerequisite(s):** NUR 66000 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 3.00. This practicum course focuses on the development of leadership skills when teaching in the didactic, clinical or on-line environments. Knowledge of design and strategies for the evaluation of learning outcomes based on best available evidence are included. Assignments are designed for learners to demonstrate the application of educational theory, evidence-based teaching, assessment methods and principles of curricular design. Prerequisites: NUR 66000 and NUR 66300. Typically offered Fall Spring Summer.

### **NUR 66300 - Assessment And Measurement In Nursing Education**

**Prerequisite(s):** NUR 66100 FOR LEVEL GR WITH MIN. GRADE OF C- (MAY BE TAKEN CONCURRENTLY) AND NUR 66000 FOR LEVEL GR WITH MIN. GRADE OF C- (MAY BE TAKEN CONCURRENTLY) AND (NUR 51000 FOR LEVEL GR WITH MIN. GRADE OF C- OR NUR 52300 FOR LEVEL GR WITH MIN. GRADE OF C-)

Credit Hours: 3.00. This course prepares students to understand nursing program standards related to admission, progression and graduation. Students explore current evidence in assessment and evaluation practices in the context of varying levels of nursing programs. Students develop evidence based assessment and evaluation strategies in cognitive, psychomotor and affective domains in a variety of nursing educational settings and programs. Students analyze assessment and evaluation data to revise and close the feedback loop to improve learning. Pre or Co-requisites: NUR 66100 and NUR 66000. Prerequisite: NUR 51000 or NUR 52300. Typically offered Fall Spring Summer.

### **NUR 67000 - Practicum In Nursing Research**

**Prerequisite(s):** NUR 51000 FOR LEVEL GR WITH MIN. GRADE OF B

Credit Hours: 1.00 to 6.00. The student participates in nursing research projects under the guidance of a member of the faculty. This plan of individualized instruction may be used in any area of nursing specialization, education, or administration. Credit to be determined by nature and extent of assignment. Typically offered Spring Summer.

### **NUR 67100 - Nurse Executive Practicum I**

**Prerequisite(s):** NUR 65200 FOR LEVEL GR WITH MIN. GRADE OF B (MAY BE TAKEN CONCURRENTLY) AND NUR 65100 FOR LEVEL GR WITH MIN. GRADE OF B AND NUR 65300 FOR LEVEL GR WITH MIN.

**GRADE OF B**

Credit Hours: 2.00. The first practicum experience is designed to integrate theory and knowledge learned in the program in the actual practice of the nurse executive role. The practicum provides an opportunity for the student to experience the nurse executive role while receiving on-going feedback, guidance, and support. In this first practicum for the student, the focus is on the professional and operational activities of the nurse executive, such as interviewing, hiring, quality improvement, relationship building, collaboration, and the budgeting process. The student will assess the role and responsibilities of the nurse executive in leading others in the provision of healthcare. In collaboration with the preceptor and the faculty, the student will design a project that will improve safety, quality of care, or the work environment for nurses. Prerequisites: NUR 65100, NUR 65300, and NUR 66500. Concurrent Prerequisites: NUR 65200. Typically offered Fall Spring Summer.

**NUR 67200 - Nurse Executive Practicum II**

**Prerequisite(s):** NUR 67100 FOR LEVEL GR WITH MIN. GRADE OF B (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 2.00. The second practicum experience is designed to integrate theory and knowledge learned in the program in the actual practice of the nurse executive role. The practicum provides an opportunity for the student to experience the nurse executive role while receiving ongoing feedback, guidance, and support. In this second practicum, the focus continues to be on the professional and operation activities of the nurse executive while expanding on the role of the nurse executive in the community. The student will assess the role and responsibilities of the nurse executive in leading others in the provision of healthcare for the community. In collaboration with the preceptor and the faculty, the student will design a project that will improve access to care, safety and quality of care for the community, or the work environment of the nursing community. The student will be engaged in a local professional organization for nurse executives. Prerequisites: NUR 67100. Typically offered Fall Spring Summer.

**NUR 67600 - Knowledge Translation For Transforming Healthcare**

**Prerequisite(s):** NUR 62400 FOR LEVEL GR WITH MIN. GRADE OF C AND NUR 65600 FOR LEVEL GR WITH MIN. GRADE OF C AND NUR 64200 FOR LEVEL GR WITH MIN. GRADE OF C

Credit Hours: 3.00. This course advances students' knowledge of implementation and knowledge translation science as it relates to contemporary healthcare policy and delivery. Students examine evidence implementation models and science to design and lead or facilitate efforts to transform nursing practices and healthcare in a variety of contexts. Students develop skills to identify critical issues through diagnostic methods, context assessment and stakeholder analysis and engagement. Based on these analyses, they search, appraise and interpret the best available evidence relevant to the measurement of effectiveness, meaning and impact implementation strategies. They examine strategies for both de-implementation when strategies fail, and for sustainability when strategies work to advance contemporary healthcare and patient outcomes. Prerequisites: NUR 62400 and NUR 64200 and NUR 65600 and NUR 67800. Typically offered Fall Spring Summer.

**NUR 67700 - Cognate Residency: Knowledge Transition**

Credit Hours: 3.00. Students apply knowledge from pre-requisite courses to develop a project focused on translating knowledge into contemporary healthcare policy and delivery. The emphasis is on designing model-driven evidence-based strategies focused on transforming nursing practice and healthcare in a variety of contexts. Residency activities provide students with opportunities to define the scope of the knowledge translation project, obtain baseline information, engage with stakeholders, and prepare a project proposal that addresses sustainability and cost. Prerequisites: NUR 67600. Typically offered Fall Spring Summer.

**Organizational Behavior and Human Resources****OBHR 22100 - Principles Of Management**

**Prerequisite(s):** MGMT 10100 FOR LEVEL UG WITH MIN. GRADE OF C OR BUSM 10100 FOR LEVEL UG WITH MIN. GRADE OF C OR GBG 12700 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. The fundamentals of organizing a business to succeed. The planning, organization, directing and controlling of business activities and the organizational plan to combine and allocate resources to meet expressed goals is the focus of this course. Typically offered Summer Fall Spring.

**OBHR 23100 - Survey Of Human Resources**

**Prerequisite(s):** MGMT 10100 FOR LEVEL UG WITH MIN. GRADE OF C OR BUSM 10100 FOR LEVEL UG WITH MIN. GRADE OF C OR GBG 12700 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Exposure to a wide variety of human resource activities in the business enterprise. Topics include staffing, development, compensation and labor relations. This course is not open to Management majors. Typically offered Summer Fall Spring.

**OBHR 33000 - Introduction To Organizational Behavior**



Credit Hours: 3.00. This course investigates the impact that individuals, groups, and organizational structure have on behavior within organizations for the purpose of applying such knowledge toward improving an organization's effectiveness. Attention is given to such topics as motivation, leadership, group processes, organizational structure, technological innovation, and conflict management. Emphasis is placed on developing management skills and application of organizational behavior theories. Typically offered Fall Spring.

### **OBHR 42300 - Negotiations**

Credit Hours: 3.00. This course provides both the theoretical foundation and practical methods for performing effective negotiations, persuading, and managing conflict in real life situations. Participants will be able to increase their own knowledge of the field and will be able to improve the outcomes of their own negotiations for themselves and others. The participants will also be able to use their knowledge of conflict management to more effectively resolve interpersonal and inter-group conflicts, both from the perspective of a participant and a third-party. Typically offered Summer Fall Spring.

### **OBHR 42600 - Training and Managerial Development**

**Prerequisite(s):** OBHR 43100 FOR LEVEL UG WITH MIN. GRADE OF C OR BA 23100 FOR LEVEL UG WITH MIN. GRADE OF C OR GBG 35200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This courses focuses on training from a line managerial perspective and on management development, addressed through a consideration of critical personal, interpersonal, and team related skills. Typically offered Fall Spring.

### **OBHR 42700 - Occupational Safety And Health**

Credit Hours: 3.00. An examination of the economic, legal and social factors of occupational safety and health issues within an organization. Consideration will be given to the compliance with federal and state laws, safety training programs safety recognition and incentive programs, health education programs and joint labor/management safety committees. Typically offered Fall Spring Summer.

### **OBHR 43000 - Labor Relations**

Credit Hours: 3.00. This course examines the role of unions in American society. Topics discussed include labor management relations, why workers join unions, dispute resolution, and cooperative labor-management programs. No credit for students in the School of Management. Typically offered Fall Spring Summer.

### **OBHR 43100 - Human Resources Management**

Credit Hours: 3.00. Survey of the theory and techniques used in the administration of the personnel function in the modern enterprise. Emphasis is placed on the meaning of work in industrialized societies, motivation and leadership of employees, manpower planning and development, reward systems, the minority worker, and the development of managerial skills. Techniques studied include the use of assessment centers, selection tests, wage and salary administration, job analysis, and man-power forecasting. No credit for students in the School of Management. Typically offered Fall Spring Summer.

### **OBHR 43300 - Staffing Organizations**

**Prerequisite(s):** OBHR 43100 FOR LEVEL UG WITH MIN. GRADE OF C OR BA 23100 FOR LEVEL UG WITH MIN. GRADE OF C OR GBG 35200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An examination of the theory and practice of human resource planning, selection, and placement. The course will link human resource planning to organization-wide strategic planning. Selection devices as well as validation and reliability strategies are discussed. The implications of legal requirements for hiring practices are investigated. Typically offered Fall Spring.

### **OBHR 43400 - Benefits Administration**

**Prerequisite(s):** OBHR 43100 FOR LEVEL UG WITH MIN. GRADE OF C- OR BA 23100 FOR LEVEL UG WITH MIN. GRADE OF C- OR GBG 35200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A study of the historical, financial, motivational, and substantive aspects of employee benefits. Emphasis will be placed on practical administration. Consideration will be given to issues of productivity, union involvement, and future trends in benefit management. Typically offered Fall Spring.

### **OBHR 43500 - Compensation Management**

**Prerequisite(s):** OBHR 43100 FOR LEVEL UG WITH MIN. GRADE OF C- OR BA 23100 FOR LEVEL UG WITH MIN. GRADE OF C- OR GBG 35200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A study of the theory and practice of employee compensation systems considering monetary topics, performance appraisal maintenance, audits of compensation decisions, internal equity, and individual equity will be discussed. Typically offered Fall Spring.

### **OBHR 43600 - Collective Bargaining**

**Prerequisite(s):** OBHR 43100 FOR LEVEL UG WITH MIN. GRADE OF C- OR BA 23100 FOR LEVEL UG WITH MIN. GRADE OF C- OR GBG 35200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Considers current developments in the areas of collective bargaining, negotiations, and third party mediation and arbitration practices. Consideration will be given to the environments, structure, and processes of collective bargaining. Emphasis is on the practical aspects of labor-management negotiation and proceedings. Typically offered Fall Spring.

### **OBHR 43700 - Managing Career Development**

**Prerequisite(s):** OBHR 43100 FOR LEVEL UG WITH MIN. GRADE OF C- OR BA 23100 FOR LEVEL UG WITH MIN. GRADE OF C- OR GBG 35200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A consideration of individual and organization-centered approaches to career development. The seminal theories of career development. The seminal theories of career management will be discussed in terms of practical applications. Topics in career and life stage development will be explored Career path, dual career families, and careers in emerging fields will be discussed. Methods for diagnosing and planning services for employees from diverse backgrounds and at various occupational levels are considered. Typically offered Fall Spring.

### **OBHR 43800 - Managing Workforce Diversity**

Credit Hours: 3.00. This course will focus on the challenges of managing a work force. Consideration will be placed on identifying and resolving workplace problems attributed to the presence of demographic differences such as gender, race, ethnicity, age and able bodiness background among employees within a given work environment. Emphasis is on developing and conducting diversity training programs and reinforcing principles of valuing diversity. Typically offered Fall Spring.

### **OBHR 43900 - Employment Law**

Credit Hours: 3.00. This course presents and examines the principles of employee-employer relations law. Students will be exposed to various federal and state laws pertaining to employment discrimination based upon demographic differences, such as gender, race, age, ethnicity, and able bodiness. In addition, this course will address issues such as negligent hiring, employment-at-will, wrongful discharge, drug and alcohol testing, and privacy in the workplace. Typically offered Fall Spring.

### **OBHR 44000 - Social Response Of Business**

Credit Hours: 3.00. The course surveys areas of social choice faced by organizations. Students have the opportunity to clarify their own positions regarding appropriate organizational responses to such social problems as pollution, civil rights, consumerism, individual privacy, and business-government relations. Teaching techniques include case discussions, films, guest speakers, and student presentations. Typically offered Spring.

### **OBHR 44100 - Introduction To Organizational Change And Development**

Credit Hours: 3.00. This course orients the student to planned approaches to adaptation and change in organizations. It is based upon applied behavioral science research and concepts which address themselves to "real life" change problems; models of the change-process, change strategies, the change agent, the critical study of organizational change efforts. This course will aid the student in understanding the dynamics of organizational behavior. Typically offered Fall Spring.

### **OBHR 44200 - Introduction To Administrative Decision Making**

Credit Hours: 3.00. An introductory course in organizational leadership which focuses on critical skills which a manager needs to work effectively with others. Topics covered include planning, interpersonal style, effective feedback, group decision making, and inter-group relations. The course will consist of both formal instruction and experiential learning. Typically offered Fall.

### **OBHR 44300 - Contemporary Legal And Social Issues In Human Resource Management**

**Prerequisite(s):** OBHR 43100 FOR LEVEL UG WITH MIN. GRADE OF C- OR BA 23100 FOR LEVEL UG WITH MIN. GRADE OF C- OR GBG 35200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course involves the comprehensive study of contemporary legal and social issues facing managers with a heavy emphasis on human resource management (HRM). Legal and ethical issues relevant to HRM are discussed at a level where students will develop policies and practices to assist firms avoid legal action and costly litigation. Defenses to human resource related lawsuits are also discussed. Theories regarding discrimination, harassment, and social workplace issues are analyzed enabling students to apply their knowledge to novel concrete situations. The course assists current and future HR practitioners to effectively manage an organization's legal posture to be congruent with its strategic objectives. Typically offered Summer Fall Spring.

### **OBHR 44400 - Leadership**

**Prerequisite(s):** OBHR 33000 FOR LEVEL UG WITH MIN. GRADE OF C OR BA 23000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This course is designed to introduce students to leadership theory and practice. Students will learn

theories of leadership, practice methods of evaluating effective leadership, and develop a personal leadership action plan. Particular emphasis is placed on developing ethical leadership and trust. Typically offered Fall Spring Summer.

### **OBHR 44500 - Team Dynamics**

**Prerequisite(s):** OBHR 33000 FOR LEVEL UG WITH MIN. GRADE OF C OR BA 23000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Examines team dynamics from both managerial and member perspectives. Basic concepts of interpersonal behavior, facilitation of effective teamwork, team design, and team processes are discussed. Additional topics include virtual, high performance, and cross-cultural teams. Concepts will be applied in team projects and exercises. Typically offered Fall Spring Summer.

### **OBHR 44800 - Human Resources Information Systems**

**Prerequisite(s):** OBHR 43100 FOR LEVEL UG WITH MIN. GRADE OF C- OR GBG 35200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. The course topics will include ERP systems, e-business and electronic support of human resource function. Typically offered Fall Spring Summer.

### **OBHR 49000 - Problems In Organizational Behavior**

Credit Hours: 1.00 to 4.00. Supervised readings and reports in various subjects. Arrange with instructor before enrolling. Permission of instructor required. Typically offered Fall Spring Summer.

### **OBHR 49400 - Leadership Capstone**

**Prerequisite(s):** OBHR 44400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A senior level case-oriented approach designed to provide the student with opportunities to evaluate various organizational policies and strategies and recommend improvements for the organization's future. This course is considered the Leadership "capstone" and will allow students the opportunity to utilize the knowledge gained in previous courses. Typically offered Fall Spring Summer.

### **OBHR 49500 - Internship In Human Resources**

Credit Hours: 1.00 to 4.00. A special course in selected areas of management, designed to provide practical field experience under professional supervision in selected situations. Permission of Instructor required. Typically offered Fall Spring Summer.

### **OBHR 49900 - Undergraduate Research In Organizational Behavior**

Credit Hours: 3.00. Student will work with a faculty member on a research project in their major. They will contribute to ongoing research while learning current research techniques in management. During this process, the students will develop critical thinking and oral and written communication skills. Permission of Instructor required. Typically offered Fall Spring Summer.

### **OBHR 58110 - Foundations Of Organizational Behavior**

Credit Hours: 1.00 to 2.00. A review of the key elements of human relations in organizations necessary for managerial effectiveness (productivity, satisfaction, turnover, engagement). Focus is on the application of theory to issues such as motivation, values and ethics, group dynamics, leadership and change, and organizational structure and culture. Typically offered Fall Spring Summer.

### **OBHR 59000 - Problems In Organizational Behavior And Human Resource Management**

Credit Hours: 1.00 to 4.00. Advanced study and investigation in a field of organizational behavior and human resource management under the guidance of staff. Permission of instructor required. Typically offered Fall Spring Summer.

### **OBHR 63100 - Human Resource Systems**

Credit Hours: 3.00. An overview of selected human resource activities/systems for the future human resource professional. Emphasis will be placed on building skills in areas that will provide a foundation for future coursework in human resources management. Topics covered include planning and forecasting human resource needs, job analysis, design and evaluation of training systems, design of performance appraisal systems, and safety and health in the workplace. Typically offered Spring Fall.

### **OBHR 63300 - Human Resource Management**

Credit Hours: 2.00 (West Lafayette) 3.00 (Calumet, North Central) Introduction to human resource management for general managers. Emphasis is on the impact of human resource components (e.g., staffing, rewards, labor relations) on the performance of the firm. Case analyses and computerized databases are used to illustrate major components of human resource decision making. Not open to students with credit in MGMT/OBHR 63100. Prerequisite: Master's student standing and Management majors only. Typically offered Fall Spring.

### **OBHR 66900 - Negotiations In Organizations**

Credit Hours: 1.00 to 3.00. Decision making examines organizational context, stages, creativity, biases, and group processes. Negotiations examine strategies for preparing and conducting negotiations. The principal focus is on individual and interpersonal aspects of each. Permission of department required. Typically offered Fall Spring.

### **OBHR 68100 - Managing Behavior In Organizations**

Credit Hours: 2.00 to 4.00. Individual and group behavior are the central components of the study of behavior in organizations. Focus is on the managerial application of knowledge to issues such as motivation, group processes, leadership, organizational design structure, and others. The course employs cases, exercises, discussions, and lectures. Prerequisite: Master's student standing and Management majors only. Typically offered Fall Spring.

### **OBHR 69000 - Advanced Problems In Organizational Behavior And Human Resource Management**

Credit Hours: 2.00 to 4.00. Advanced investigation in a specific organizational behavior or human resource field at the graduate level. Typically offered Fall Spring Summer.

## **Organizational Leadership and Supervision**

### **OLS 10000 - Introduction To Organizational Leadership**

Credit Hours: 1.00. Transitional course to orient the Organizational Leadership and Supervision freshman to the department and Purdue. Typically offered Fall Spring Summer.

### **OLS 10200 - Freshman Experience**

Credit Hours: 1.00. This course provides entering first-year transfer students with less than 60 credits an opportunity to become familiar with available departmental and university resources, such as the advising process, the course management system, engage in goal setting, align academic and life goals, explore available career options, and develop a plan for success. Typically offered Fall Spring.

### **OLS 13100 - Introduction To Safety And Health Management**

Credit Hours: 3.00. Course emphasizes developing an understanding of various topics related to environmental health and safety which owners, managers, supervisors, and employees need to be aware of in the working environment. Typically offered Fall Spring Summer.

### **OLS 16300 - Fundamentals Of Self-Leadership**

Credit Hours: 3.00. This course provides students with an introduction to the Organizational Leadership and Supervision program, and prepares them for the program curriculum. It serves both as the Freshman Experience course, and the fundamental introduction to leadership. It includes the utilization of campus resources, goal setting, value and role exploration, relationship of academic planning and life goals, disciplines specific career exploration, and critical thinking. Typically offered Fall Spring Summer.

### **OLS 24200 - Fundamentals Of Ergonomics**

Credit Hours: 3.00. This course is designed for students interested in the areas of occupational health and safety, production engineering, facilities management, and supervision and management. An understanding of how to prevent musculoskeletal disorders and improve manual working conditions will be gained through the use of applicable real life exercises and exploration of research in various industries. This course will cover a general study of the musculoskeletal system as well as guidelines for lifting, reaching, seated work, machine work, hand tools and vibration. Typically offered Fall Spring.

### **OLS 25200 - Human Relations In Organizations**

Credit Hours: 3.00. A survey of the concepts that provide a foundation for the understanding of individual and group behavior in organizations. Special emphasis on typical interpersonal and leadership relationships. Typically offered Fall Spring Summer.

### **OLS 27200 - Job Evaluation**

Credit Hours: 2.00 or 3.00. (IET 27200) A survey of the basic principles and significance of job evaluation. An analysis of current practices and techniques used in job analysis, job descriptions, and job evaluation. Typically offered Fall Spring.

### **OLS 27400 - Applied Leadership**

Credit Hours: 3.00. Introduction to applied leadership in the context of organizational functions, structures, and operation. Typically offered Fall Spring Summer.

### **OLS 30000 - Safety And Health For Engineering Technologies**

**Prerequisite(s):** OLS 13100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course explores a wide range of environmental health and safety topics relevant to technologists, engineers, and managers in both public and private sectors. Emphasis is placed on an understanding of identification, evaluation, and control of various hazards which could harm people, property, and the environment by using risk assessment. Instructor permission required. Typically offered Fall Spring.

### **OLS 30300 - Substance Abuse In The Workplace**

Credit Hours: 3.00. Overviews alcohol and drug problems affecting job performance in the workplace. Topics covered include current concepts of alcoholism and addictions, supervisor's role and responsibilities, work behavior of alcohol

and drug abusers. Constructive confrontation and intervention, employee assistance programming, and referral. Typically offered Fall Spring.

### **OLS 33100 - Occupational Safety And Health**

Credit Hours: 3.00. A presentation of the aspects of occupational safety and health that are essential to the organizational leaders. Special emphasis is placed on developing an understanding of the economic, legal, and social factors related to providing a safe and healthy work environment. Typically offered Spring Fall Summer.

### **OLS 33200 - Fundamentals Of Industrial Hygiene**

**Prerequisite(s):** MA 14800 FOR LEVEL UG WITH MIN. GRADE OF C AND CHM 11900 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An examination of the industrial hygiene factors instrumental in maintaining a safe and healthful workplace. Special emphasis is given to the recognition, evaluation, and control of occupational health hazards. Typically offered Fall Spring.

### **OLS 33300 - Environmental Health And Safety Legislation And Standards**

**Prerequisite(s):** OLS 30000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A study of the laws, codes, and standards, which affect the occupational safety and health. Emphasis is placed on an overview of various environmental, health, and safety related laws, codes, and standards such as: OSHA, DOT, FRA, MSHA, EPA, NFPA, ANSI, NIOSH, ISO, etc. Typically offered Fall Spring Summer.

### **OLS 33400 - Fire Protection**

Credit Hours: 3.00. Explores the principles involved in the protection of people and property from fire and explosion. Basic fire safety terminology, fire chemistry and extinguishment, fire safety references and standards, and fire safety management are presented. Also discussed are control measures for common fire and explosion hazards and the design of buildings in terms of life safety and fire suppressive systems. Typically offered Fall Spring.

### **OLS 33600 - Fundamentals Of Risk Assessment And Management**

**Prerequisite(s):** OLS 30000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Explore techniques for assessment and methods for managing the risks associated with occupational injuries, illnesses, deaths and property damage in the workplace. The principle methods include: 1) identifying the exposures to loss; 2) evaluating alternative techniques for treating the exposure; 3) selecting the appropriate technique(s); 4) implementing the chosen technique; and 5) monitoring and improving the risk management system. Typically offered Fall Spring Summer.

### **OLS 33700 - Introduction To Emergency Management**

Credit Hours: 3.00. Explore the principles of emergency management in preparing for disruptive events. Students explore the requirements and value of emergency management in preparation for a variety of emergency events likely to occur in either industrial or municipal environments. Students will study the concepts of emergency management including prevention of, mitigation of, preparedness for, response to, and recovery from disruptive emergency events. Typically offered Fall Spring Summer.

### **OLS 34000 - Fundamentals Of Construction Safety**

Credit Hours: 3.00. (CEMT 34000) Overview of construction safety and health regulations. Throughout the course students will participate in discussions pertaining to construction safety issues and will be provided information to evaluate the primary OSHA targeted hazards in the construction industry, OSHA 30 Hr. card. Students will learn to recognize key hazards, be exposed to control technologies and corrective actions for the prevention of an injury, illness, and fatality that commonly occurs at construction sites. Typically offered Fall Spring Summer.

### **OLS 34100 - Fundamentals Of Environmental Health**

**Prerequisite(s):** OLS 33600 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This class will be presented as an overview of current issues in community and working environments. Those issues which are most essential to the supervisor/manager will be emphasized. Students will develop an understanding of key Environmental Protection Agency (EPA) regulations such as CERCLA, Clean Air Act and its Amendments, Clean Water Act, and RCRA and typical means to ensure compliance. Typically offered Fall Spring.

### **OLS 34300 - Hazardous Materials**

Credit Hours: 3.00. Explore the practical, safe approach to handling hazardous materials. Topics include: basic chemistry of hazardous materials, hazard classes and toxicology, evaluating risk, selecting correct protective equipment, specific competencies required of persons responding to a hazardous materials emergency, managing an incident, and addressing tactical and strategic issues while minimizing down-time and reducing risk to other workers. Typically offered Fall Spring Summer.

### **OLS 35000 - Creativity In Business And Industry**

Credit Hours: 3.00. A study of the ways an individual can become more creative and how they can develop an environment which encourages creativity from employees. Typically offered Fall Spring Summer.

### **OLS 35100 - Innovation And Entrepreneurship**

**Prerequisite(s):** OLS 35000 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An in-depth study of innovation in existing organizations, as well as entrepreneurship in start-up businesses, franchises, family-owned firms, and other business formats. Typically offered Fall Spring Summer.

### **OLS 35500 - Incident Investigation**

**Prerequisite(s):** OLS 30000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Explore various approaches for conducting an incident/accident investigation, including methods to determine the causes of incidents/accidents, analyses of data gathered as part of the process and proper documentation. Through a series of case studies and examples, students will have the opportunity to identify the corrective action steps for preventing future occurrences and presenting those recommendations to management for implementation. Typically offered Fall Spring Summer.

### **OLS 36400 - Professional Development Program**

Credit Hours: 3.00. A survey course covering many professional and personal facets relative to entering the work force upon graduation. Major areas addressed include resume preparation, interviewing techniques, development of job-search plans, social skills, and analysis of career fields and opportunities. Typically offered Fall Spring Summer.

### **OLS 36800 - Personnel Law**

**Prerequisite(s):** OLS 27400 FOR LEVEL UG WITH MIN. GRADE OF C OR OLS 37600 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Wage contracts and payments, workmen's compensation and insurance, injunction, strikes and boycotts, and statutes affecting labor.. Typically offered Fall Spring.

### **OLS 37200 - Staffing and Performance Appraisal**

**Prerequisite(s):** OLS 27400 FOR LEVEL UG WITH MIN. GRADE OF C OR OLS 37600 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An application-oriented simulation of developing a compensation and benefits program, including the study of staffing and appraising employee performance. Typically offered Fall Spring.

### **OLS 37400 - Supervisory Management**

**Prerequisite(s):** OLS 25200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Introduction to and overview of the fundamental concepts of supervision. Emphasis is placed on the supervisor's major functions and essential areas of knowledge, his relations with others, and his personal development. Typically offered Fall Spring Summer.

### **OLS 37500 - Training Methods**

**Prerequisite(s):** OLS 25200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Principles, practices, and methods of employee training. Introduction to systematic training program design, development, and evaluation. Emphasis is on the supervisor as a trainer. Typically offered Fall Spring Summer.

### **OLS 37600 - Human Resource Issues**

**Prerequisite(s):** OLS 25200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Analysis and discussion of case problems concerning typical leadership and personnel situations that impact upon the supervisor/manager. Emphasis directed toward development of attitude, philosophy, analytical ability, and problem-solving skills within the working environment. Typically offered Fall Spring Summer.

### **OLS 37800 - Labor And Management Relations**

**Prerequisite(s):** OLS 25200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An introduction to, and overview of, the fundamental concepts of labor relations, collective bargaining, and dispute resolution procedures. An international comparative analysis is used to assess some of the legal, economic, and political structures of labor relations. Typically offered Fall Spring Summer.

### **OLS 37900 - Compensation And Benefits**

**Prerequisite(s):** OLS 27400 FOR LEVEL UG WITH MIN. GRADE OF C OR OLS 37600 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Focus on the use of rewards to achieve organizational objectives. Included in the use of rewards to

attract, retain, and motivate employee behaviors in a cost effective manner and in support of the organization's mission. Pay for performance programs, employee benefits, job design, promotion, recognition, and other rewards will be discussed. Permission of instructor required. Typically offered Fall Spring Summer.

### **OLS 38400 - Leadership Process**

**Prerequisite(s):** OLS 25200 FOR LEVEL UG WITH MIN. GRADE OF C AND OLS 16300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An in-depth study of a sequence of manager actions that influence employees to achieve desired performance results. How these manager actions are transformed by employees into desired performance is also covered. Typically offered Fall Spring Summer.

### **OLS 38600 - Leadership For Organizational Change And Innovation**

**Prerequisite(s):** (OLS 27400 FOR LEVEL UG WITH MIN. GRADE OF C OR OLS 37600 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 3.00. Introduction to and overview of fundamental concepts of leading organizational change and innovation. Typically offered Summer Fall Spring.

### **OLS 38700 - Emergency Planning And Exercises**

**Prerequisite(s):** OLS 33100 FOR LEVEL UG WITH MIN. GRADE OF C AND OLS 33700 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Explore the development of emergency plans and exercises for organizations. Students will learn requirements imposed by the Occupational Safety and Health Administration (OSHA) for emergency plans. Students will study the linkage between emergency plans through emergency preparedness exercises. Students will develop an onsite emergency plan for an actual organization, and an emergency exercise to test the plan. Typically offered Fall Spring Summer.

### **OLS 38800 - Leadership Through Teams**

**Prerequisite(s):** OLS 25200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. The group process, team development and exploration of dynamics that impact group and team performance. Typically offered Summer Fall Spring.

### **OLS 38900 - Emergency Management Programs**

**Prerequisite(s):** OLS 38700 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Explore hazard analysis and develop a mitigation plan for an actual organization. The class will examine current plans and practices developed for site, community or countrywide use. Last course In the Emergency Management Certificate. Typically offered Fall Spring Summer.

### **OLS 39900 - Special Topics**

Credit Hours: 1.00 to 6.00. Hours and subject matter to be arranged by staff. Typically offered Fall Spring Summer.

### **OLS 41500 - Introduction To Environmental Management**

**Prerequisite(s):** OLS 34100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. This class will provide an introduction to current issues and concepts in environmental management including an overview of environmental policy, necessary measures to control and mitigate environmental impacts, and key Environmental Protection Agency (EPA) regulations such as CERCLA, Clean Air Act and its Amendments, Clean Water Act, and RCRA, and typical means to ensure compliance. Typically offered Fall Spring Summer.

### **OLS 42100 - Psychology And Sociology Of Safety**

**Prerequisite(s):** OLS 33100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Explore contemporary approaches used to influence employees safety related behaviors using the principles of psychology and sociology. Case studies of behavior and operations that resulted in both human and material loss will be studied. Permission of Instructor required. Typically offered Fall Spring Summer.

### **OLS 43000 - Environmental Health And Safety Management**

**Prerequisite(s):** OLS 33100 FOR LEVEL UG WITH MIN. GRADE OF C AND OLS 33600 FOR LEVEL UG WITH MIN. GRADE OF C AND OLS 35500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Designing and developing a management system to ensure safety and health for employees and environment where they work. Survey of designing a management system to ensure safety and health for employees operating processes and equipment, through the use of control measures that include hazard identification, risk assessment, and job safety analysis. The students will design a safety, health and environmental system that include the techniques for management of the designed system. Typically offered Fall Spring Summer.

### **OLS 43300 - Analysis And Design Of Safety Systems**

Credit Hours: 3.00. A comprehensive survey of the analysis and design of safety system techniques for processes, equipment and machinery through the use of such control measures as hazard identification, risk assessment, and job safety analysis. Typically offered Fall Spring.

### **OLS 44000 - Leading With Integrity**

Credit Hours: 3.00. An investigation of ethical problems in business practice. Topics include personal morality in profit-oriented enterprise; codes of ethics; obligations to employees and other stakeholders; truth in advertising; whistle-blowing and company loyalty; regulation, self and government; the logic and future of capitalism. Emphasis on business law and legal impacts on ethical decision making. Typically offered Summer Fall Spring.

### **OLS 44100 - Leading Ethically**

**Prerequisite(s):** OLS 27400 FOR LEVEL UG WITH MIN. GRADE OF C OR OLS 37600 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An investigation of ethical problems in group and organizational settings. Topics include personal morality, character building, strategies for decision making, organizational values and codes of ethics, and cultural differences in ethical values. Emphasis on personal development, values clarification and ethical decision making.. Typically offered Summer Fall Spring.

### **OLS 45400 - Gender And Diversity In Management**

**Prerequisite(s):** OLS 25200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. The work force of the future will represent multiple differences including gender, race, culture, ethnicity, physical abilities, and age. Following this broad-based perspective of diversity, this course will focus on using knowledge of diversity to develop the leadership potential of individuals in organizations. Typically offered Summer Fall Spring.

### **OLS 46700 - Service Learning**

**Prerequisite(s):** (OLS 25200 FOR LEVEL UG WITH MIN. GRADE OF C OR OLS 27400 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 3.00. Service learning is a reflective experience in which students are actively engaged in the community and integrate that experience into the classroom. Permission of instructor required. Typically offered Summer Fall Spring.

### **OLS 46800 - Personnel Law**

**Prerequisite(s):** OLS 25200 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A study of employment laws specially affecting employer-employee relationships. The purpose of the course is to provide the supervisor with a summary of current employee relations laws and a practical approach to dealing with daily employer-employee legal concerns. Topics include laws related to discrimination based on sex, race, age, handicap, hiring and discharge of workers, drug and alcohol testing, privacy in the workplace, wages, ERISA, and other issues on employee rights and employer responsibilities. Typically offered Fall Spring Summer.

### **OLS 47100 - Human Resource Information Systems**

**Prerequisite(s):** OLS 37600 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 4.00. A practical introduction and application of Human Resource Systems Platforms of interest to the organizational or business leader. Topics include HRIS platforms, systems design and evaluation, coding structure, data input procedures, decision making, implementation, and human resource operational procedures. Emphasis is on hands-on practical application and development. Typically offered Summer Fall Spring.

### **OLS 47200 - Seminar In Safety**

Credit Hours: 3.00. An examination of various topics which are relevant to the safety field. Case studies of unique and/or special safety problems, current events relating to safety, and ethics in safety are emphasized. Typically offered Fall Spring.

### **OLS 47300 - Global Human Resource Issues**

**Prerequisite(s):** OLS 37600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The traditional Human Resource Management System has five components. These function within the internal and external environments of the organization. With the rapid adaptation of technology, the world has become smaller. A study of global human resource issues provides students with the unique opportunity to employ theory learned in fundamental courses and develop in-depth analytical abilities presented when a business opportunity, such as globalization, changes the culture and scope of the firm. Typically offered Summer Fall Spring.

### **OLS 47400 - Conference Leadership**



**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Understanding the role of facilitating group discussion in business and industry conferences. Special emphasis on developing group facilitation skills. Typically offered Summer Fall Spring.

### **OLS 47700 - Conflict Management**

Credit Hours: 3.00. A study of the methods for dealing with innerpersonal, interpersonal, and political disputes by means generally outside the traditional court system. Students will investigate the theoretical and practical aspects of conflict assessment, negotiation, problem solving, mediation, and arbitration. Typically offered Summer Fall Spring.

### **OLS 47900 - Staffing Organizations**

**Prerequisite(s):** OLS 37600 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An applications-oriented study of key concepts in staffing organizations, including principles and issues in conducting job analysis; preparing job descriptions/specifications; and screening/selecting employees. Special emphasis on the design, validation, and operation of high-volume staffing systems. Typically offered Summer Fall Spring.

### **OLS 48200 - Labor Arbitration**

**Prerequisite(s):** OLS 37800 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Student will learn how to analyze discipline and discharge cases in light of the just cause requirements. They will also be able to evaluate contract language against basic standards and legal principles. In addition, they will be able to write an arbitrator's opinion and award. Typically offered Fall Spring.

### **OLS 48300 - The Common Law Of The Workplace**

**Prerequisite(s):** OLS 37800 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Statutory and individual rights are expanding significantly, and supervisors must have the expertise to deal with these new workplace issues. The intent of this course will be to present cases reflecting how supervisors deal with current workplace issues. Typically offered Summer Fall Spring.

### **OLS 48400 - Leadership Strategies For Quality And Productivity**

**Prerequisite(s):** (OLS 27400 FOR LEVEL UG WITH MIN. GRADE OF C OR OLS 37600 FOR LEVEL UG WITH MIN. GRADE OF C) AND STAT 30100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A study of how organizational leaders create an environment conducive to high levels of employee self-motivation, quality, and productivity (TQM). Actual case situations are used to illustrate the application of course content. Typically offered Fall Spring Summer.

### **OLS 48500 - Leadership For Team Development**

**Prerequisite(s):** OLS 25200 FOR LEVEL UG WITH MIN. GRADE OF C AND OLS 38400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An in-depth study of self-directed work teams and team processes in the work setting, with a view to understanding team functions under varying task conditions. Especially emphasized will be the leadership of teams for effective performance and maximum member satisfaction. This course deals extensively with maintenance and task behaviors of team members. Typically offered Summer Fall Spring.

### **OLS 48600 - Management Of Change**

**Prerequisite(s):** OLS 25200 FOR LEVEL UG WITH MIN. GRADE OF C AND OLS 38400 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A survey of the concepts that provide a foundation for the understanding of leadership and its relationship to the management of organizational change, with special emphasis on managing the human side of quality improvement. Typically offered Summer Fall Spring.

### **OLS 48700 - Leadership Philosophy**

**Prerequisite(s):** OLS 27400 FOR LEVEL UG WITH MIN. GRADE OF C OR OLS 37600 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A review of current managerial, education, and development theories and practices; discussions of fundamental social, economic, and political changes affecting business and the art of managing; implications of these changes for individual development and continued growth. Typically offered Fall Spring Summer.

### **OLS 49100 - Internship Program**

Credit Hours: 3.00 (West Lafayette and Tech Statewide locations) 1.00 to 3.00 (Calumet and North Central campuses). A practicum designed to combine University study with work experience directly related to the student's plan of study. Permission of department required. Typically offered Summer Fall Spring.

### **OLS 49300 - Senior Project - Phase I**

Credit Hours: 1.00. This course focuses on the methodology required to complete a senior project in an organization of the student's choice. Students will finalize their senior project topic, understand the senior project process, and begin their senior project proposal. Typically offered Fall Spring.

### **OLS 49700 - Senior Project**

**Prerequisite(s):** OLS 49300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 2.00. This course focuses on the implementation and completion of the Senior Project in an organization of the student's choice. Students will finalize their proposal and methodology, by using the process learned in Senior Projects- Phase I and from previous course material, as well as completing the project. Typically offered Fall Spring.

### **OLS 49900 - Special Topics In Organizational Leadership And Supervision**

Credit Hours: 1.00 to 3.00. Hours and subject matter to be arranged by staff. Permission of instructor required. Typically offered Fall Spring Summer.

### **OLS 54000 - Leading Collaborative Projects And Work Teams**

Credit Hours: 3.00. Focuses on methods of understanding and improving the performance of collaborations and work teams. A holistic view of teams is obtained by combining psychological theories and current practices in contemporary organizations. Topics include task design, team composition, member role structures, member socialization, influence and power, leadership, decision making, and training. Students are asked to watch and reflect on collaborative work relationships. A heavy emphasis is placed on experiential learning, including case studies and a variety of team-learning exercises. Typically offered Summer Fall Spring.

### **OLS 55000 - Managing Diversity**

Credit Hours: 3.00. This course is a senior undergraduate and graduate course designed to provide students with the comprehensive study of contemporary diversity issues facing supervisors and human resource professionals. Issues relevant to supervisors and human resource professionals are discussed at a level where students will be able to manage a diverse workforce and develop policies and practices to assist organizations to avoid problems and litigation. Typically offered Fall Spring Summer.

### **OLS 57400 - Managerial Training And Development**

Credit Hours: 3.00. Review of current managerial education and development theories and practices; discussion of fundamental social, economic, and political changes affecting business and the work of managing; implications of these changes for individual manager development and continued growth. Typically offered Fall Spring Summer.

### **OLS 57600 - Advanced Topics In Human Resource Management**

Credit Hours: 3.00. Current topics and issues in the legal, behavioral, and technical environment of human-resources management. Topics may include employment practices, labor-management relations, wage and salary administration, treatment of employees on the job, or productivity-improvement programs. Employs seminar format with emphasis on applications research. Course may be offered in traditional, distance, or blended format. Typically offered Fall Spring.

### **OLS 58000 - Interpersonal Skills For Leaders**

Credit Hours: 3.00. Development and improvement of interpersonal and group dynamic skills for effective leadership in organizations. Emphasis on action learning and real-world application of skills. Course may be offered in traditional, distance, or blended format. Open to all graduate students with special consideration given to senior OLS students with 3.0 GPA and School of Technology graduate students. Typically offered Summer Fall Spring.

### **OLS 58100 - Workshop In Organizational Leadership And Supervision**

Credit Hours: 0.00 to 8.00. Advanced study of technical and professional topics. Emphasis is on new developments relating to technical, operational, and training aspects of industry and technology education. Course may be offered in traditional, distance, or blended format. Course format may vary, depending upon topic of course. Typically offered Summer Fall Spring.

### **OLS 58200 - Leadership And Organizational Change**

Credit Hours: 3.00. Explores issues in leadership and organizational change. Included are change theories, utilizing resistance to change, contemporary approaches to change, the future workplace, and researching best practices in organizational change. Typically offered Fall Spring.

### **OLS 58300 - Coaching And Mentoring In Organizations**

Credit Hours: 3.00. This course explores issues and practices in technologically-driven organizations pertaining to the roles and functions that coaching and mentoring play in employee development. A "best practices" approach, utilizing the case method, is emphasized. Presented from the point of view of a human resource manager/leader, the focus of the course is on identifying coaching opportunities, enhancing communication skills, developing and implementing coaching and mentoring strategies, and evaluating the outcomes of these strategies. Attention is directed to facilitating personal coaching mentoring skills. Course may be offered in traditional, distance, or blended format. Permission of department required. Typically offered Spring.

### **OLS 58700 - Developing A Leadership Philosophy**

Credit Hours: 3.00. Focuses on affect, motives, attitudes, beliefs, values, ethics, morals, will, commitment, preferences, norms, expectations, responsibilities, and other key concepts as they relate to leadership. Students will develop a deeper understanding of the kind of ethical dilemmas they may face in the workplace. A variety of methods, such as invited speakers, case studies, or readings are used to deepen the understanding of these issues and provide practical examples. Students will develop their personal philosophy, as well as the skills and confidence needed for ethical leadership in their professional careers. Typically offered Summer Fall Spring.

### **OLS 58800 - Strategic Planning And Marketing For Technology**

Credit Hours: 3.00. This course examines concepts, models, and methods useful for developing strategic initiatives in industrial/technical business environments. Focuses on planning concepts, including industry structure, strategic mission, organizational structures, competitor analysis, and related areas. Graduate status or senior standing with consent of instructor. Graduate students without an OLS background may be required to take leveling courses.

Typically offered Fall Spring Summer.

### **OLS 58900 - Leadership And Ethics**

Credit Hours: 3.00. An examination of ethical, legal and policy issues facing business and technology leaders. Topics include ethical decision making, corporate social responsibility, codes of ethics, public policies and government regulations, international business practices, technology innovation, risk management in a global environment, and specific areas of law- employment, health and safety, environment, contract, warranties and liabilities, intellectual property, technology law, and international laws and regulations. Graduate student standing or senior status with consent of instructor. Graduate students without an OLS background may be required to take some leveling course.

Typically offered Fall Spring Summer.

### **OLS 59000 - Individual Research Problems In Supervision And Personnel**

Credit Hours: 1.00 to 6.00. Opportunity to study specific problems in the field of supervision and personnel under the guidance of a qualified faculty member within the department. Does not include thesis work. Permission of instructor required. Typically offered Fall Spring Summer.

## **Pharmacology and Toxicology**

### **PCTX 20100 - Introductory Pharmacology**

Credit Hours: 3.00 or 4.00. An introduction to the pharmacological basis of therapeutics. This course involves an integration of knowledge of anatomy, physiology, microbiology, and chemistry with the biological and selected chemical and physical actions and reactions of drugs. Primarily for students in nursing and other paramedical programs.

Typically offered Summer Fall Spring.

## **Philosophy**

### **PHIL 10100 - The History Of Philosophy**

Credit Hours: 3.00. An introduction to the problems, methods, and main traditions of philosophy through readings in Greek, medieval, modern, and contemporary philosophy. Typically offered Fall Spring Summer.

### **PHIL 10600 - Human Experience In Art Literature, Music, And Philosophy**

Credit Hours: 3.00. An introduction to the problems, methods, and main traditions experiences and ideas which lie at the heart of all humanities (e.g.love, death, justice, duty, nature, beauty, and deity) using as material specimens of the visual arts, music, literature, and philosophy. Typically offered Fall Spring Summer.

### **PHIL 10700 - Freshman Experience -English & Philosophy**

Credit Hours: 3.00. The course is required of all entering freshmen and transfer students with less than 60 credits. This course will include utilization of campus resources, goal setting, values exploration, relationship of academic planning and life goals, discipline specific career exploration and critical thinking. The course also serves well as the departmental Freshman Experience, since it introduces majors to the disciplines of art, literature, music, and philosophy. Typically offered Fall.

### **PHIL 11000 - Introduction To Philosophy**

Credit Hours: 3.00. The basic problems and types of philosophy, with special emphasis on the problems of knowledge and the nature of reality. Typically offered Summer Fall Spring.CTL:ISH 1050 Introduction To Philosophy

### **PHIL 11100 - Ethics**

Credit Hours: 3.00. A study of the nature of moral value and obligation. Topics such as the following will be considered: different conceptions of the good life and standards of right conduct; the relation of nonmoral and moral goodness; determinism, free will, and the problem of moral responsibility; the political and social dimensions of ethics; the principles and methods of moral judgment. Readings will be drawn both from contemporary sources and from the works of such philosophers as Plato, Aristotle, Aquinas, Butler, Hume, Kant, and J. S. Mill. Typically offered Summer Fall Spring.CTL:ISH 1051 Ethics

### **PHIL 12000 - Critical Thinking**

Credit Hours: 3.00. This course is designed to develop reasoning skills and analytic abilities, based on an understanding of the rules or forms as well as the content of good reasoning. This course will cover moral and scientific reasoning, in addition to ordinary problem solving. This course is intended primarily for students with nontechnical backgrounds.

Typically offered Summer Fall Spring.

**PHIL 15000 - Principles Of Logic**

Credit Hours: 3.00. A first course in formal deductive logic; mechanical and other procedures for distinguishing good arguments from bad. Truth-tables and proofs for sentential (Boolean) connectives, followed by quantificational logic with relations. Although metatheoretic topics are treated, the emphasis is on methods. Typically offered Summer Fall Spring.

**PHIL 20600 - Philosophy Of Religion**

Credit Hours: 3.00. The course encourages critical reflection on traditional and contemporary views about God and other religious ideas. Topics include arguments for God's existence, the problem of evil, understanding the divine attributes, miracles, religious pluralism, and life after death. Typically offered Summer Fall Spring. CTL:ISH 1052 Philosophy Of Religion

**PHIL 21900 - Introduction To Existentialism**

Credit Hours: 3.00. A survey of both the philosophical and more literary writings of the existentialist movement. Readings will be chosen from among the following writers: Kierkegaard, Nietzsche, Dostoevsky, Kafka, Marcel, Heidegger, Camus, Sartre, Jaspers, de Beauvoir, Ortega, and Merleau-Ponty. Typically offered Summer Fall Spring.

**PHIL 22100 - Introduction To Philosophy Of Science**

Credit Hours: 3.00. An introduction to the scope and methods of science and to theories of its historical development. Topics include scientific revolutions, theories of scientific method, the nature of scientific discovery, explanation, and the role of values in scientific change. Typically offered Fall Spring.

**PHIL 23000 - Religions Of The East**

Credit Hours: 3.00. (REL 23000) A study of the history, teachings, and present institutions of the religions of India, Southeast Asia, China, and Japan. This will include Hinduism, Jainism, Sikhism, Buddhism, Confucianism, Taoism, Shintoism, and Zoroastrianism. Typically offered Fall Spring Summer.

**PHIL 23100 - Religions Of The West**

Credit Hours: 3.00. (REL 23100) A comparative study of the origins, institutions, and theologies of the three major Western religions, Judaism, Christianity, and Islam. Typically offered Fall Spring Summer.

**PHIL 24000 - Social And Political Philosophy**

Credit Hours: 3.00. A study of some major social and political philosophers from Plato to contemporary authors. Issues such as justice, rights and freedom, community, and the "globalized" future will be considered. Typically offered Fall Spring.

**PHIL 27500 - The Philosophy Of Art**

Credit Hours: 3.00. A survey of the principal theories concerning the nature, function, and value of the arts from classical times to the present. Typically offered Fall Spring.

**PHIL 29300 - Selected Topics In Philosophy**

Credit Hours: 1.00 to 3.00. A critical examination of some special topic or topics in philosophy. Details concerning topics selected for treatment in a given semester may be obtained in advance from the Department of Philosophy. Sections of this course may sometimes be initiated by students upon petition to the department. Typically offered Fall Spring.

**PHIL 30100 - History Of Ancient Philosophy**

Credit Hours: 3.00. A survey of Greek philosophy from its beginning in the Milesian school through the Presocratics to Plato and Aristotle. Typically offered Fall Spring.

**PHIL 30200 - History Of Medieval Philosophy**

Credit Hours: 3.00. A survey of the main trends and figures of medieval philosophy, with an emphasis on metaphysics, epistemology, and ethics. Readings (in English translation) may include Augustine, Boethius, Avicenna, Anselm, Abelard, Maimonides, Aquinas, Scotus, Ockham and Suarez. Typically offered Fall Spring.

**PHIL 30300 - History Of Modern Philosophy**

Credit Hours: 3.00. Concentrates on the major philosophical writers from the Renaissance to the beginning of the nineteenth century: Descartes, Hobbes, Spinoza, Locke, Leibniz, Berkeley, Hume, Kant. Some in other areas, e.g., Galileo, Newton, Calvin, are also considered. Typically offered Fall Spring.

**PHIL 30400 - Nineteenth-Century Philosophy**

Credit Hours: 3.00. A study of the major movements and directions of nineteenth-century philosophy, including such figures as Hegel, Comte, Mach, Schopenhauer, Nietzsche, Mill, Royce and Peirce. Typically offered Fall Spring.

**PHIL 30600 - Twentieth-Century Philosophy**

Credit Hours: 3.00. A critical examination of the main currents of contemporary philosophical thought, such as pragmatism, analytic philosophy, phenomenology, and existentialism, and other recent developments. The course will cover selected works of such philosophers as Russell, Wittgenstein, Peirce, Whitehead, Heidegger, and Sartre. Typically offered Fall Spring.

**PHIL 32100 - Engineering Ethics**

Credit Hours: 3.00. Students will gain familiarity with ethical issues that arise in the practice of engineering and learn to use critical thinking skills in making and communicating ethically defensible professional decisions. In particular,

students will learn about ethical theory, underlying concepts such as the idea of a profession, models of engineering, codes of ethics, views of the environment, values, principles, and other relevant considerations, as well as how to draw upon these factors when making rational workplace decisions about whistleblowing, product safety, environmental responsibility, appropriate technology, supervising other engineers, respecting trade secrets, reviewing the work of other engineers, and other ethically sensitive aspects of engineering practice. Permission of department required. Permission of instructor required. Typically offered Fall Spring.

### **PHIL 32400 - Ethics For The Professions**

Credit Hours: 3.00. A study of the ethical problems faced by professionals in engineering, management, and other professional fields. Topics include: ethical theories, moral decision-making, social responsibility, employee rights and responsibilities, the environment, truth telling, affirmative action, privacy and confidentiality, whistle-blowing, and deception. Typically offered Fall Spring Summer.

### **PHIL 32500 - Ethics And Public Health**

Credit Hours: 3.00. A study of the ethical issues and problems of public health and health care. Within public health, such topics will be considered as; ethical theories; laws, codes, values, and moral decision making; the health care system; issues of the health care professional; health care professionals and patients; the sanctity of life; biomedical research and human experimentation; health policy; and allocation of resources. Typically offered Fall Spring Summer.

### **PHIL 32700 - Environmental Ethics**

Credit Hours: 3.00. A study of traditional ethical theory applied to environmental issues such as population control, conservation, human rights and pollution, nuclear energy, extinction and animal rights, our obligations to future generations, toxic waste, and issues in agriculture. Typically offered Fall Spring Summer.

### **PHIL 40100 - Eastern Religions: Hinduism, Buddhism**

**Prerequisite(s):** PHIL 23000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. In this course students will study eastern religions with a special focus on two - Hinduism and Buddhism. They will examine these faiths from a philosophical-theological perspective, focusing on topics such as the conceptions of the divine, human nature or the self, salvation, ethics, and the afterlife. Typically offered Fall Spring.

### **PHIL 40800 - Philosophy Of Love And Friendship**

**Prerequisite(s):** PHIL 11000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is a survey of the main trends and major figures in the philosophy of love and friendship in the western tradition from antiquity to the contemporary period. Using the method of history of philosophy, this course will explore special topics (the ethical basis of love and friendship, the transition from eros to agape, the body-soul dichotomy, philosophy of sexuality and embodiment, etc.), using original writings (in translation) of authors ranging from Sappho, Plato and Aristotle to Foucault. Typically offered Fall Spring Summer.

### **PHIL 49000 - Advanced Topics In Philosophy**

Credit Hours: 3.00. An advanced study of a significant topic in philosophy. Typically offered Fall Spring.

### **PHIL 59000 - Directed Reading In Philosophy**

Credit Hours: 1.00 to 3.00. A reading course directed by the instructor in whose particular field of specialization the content of the reading falls. Approval of each reading project must be secured from the department. Permission of instructor required. Typically offered Fall Spring.

## **Physical Education Skills**

### **PES 11200 - Aquatic Movement Forms**

Credit Hours: 1.00. Instruction and practice in aquatic movement forms. Students select from the activities listed in the current schedule of classes. Following is a partial list of activities: beginning swimming; intermediate swimming; advanced swimming; synchronized swimming. Typically offered Fall Spring Summer.

## **Physics**

### **PHYS 10700 - Conceptual Physics For Humanities**

Credit Hours: 3.00. A descriptive, non-mathematical explanation of physical laws and theories, phenomena, and practical applications. Topics: mechanics, properties of matter, heat and waves. Typically offered Fall Spring Summer.

### **PHYS 10800 - Conceptual Physics For Humanities**

Credit Hours: 3.00. A descriptive, non-mathematical explanation of physical laws and theories, phenomena and practical applications. Topics: electricity, magnetism, light, and modern physics. Typically offered Fall Spring Summer.

### **PHYS 15200 - Mechanics**

**Prerequisite(s):** MA 16300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 4.00. (West Lafayette, Calumet, North Central, IUPUI) 5.00 (Fort Wayne) Calculus-based. Statics; uniform and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles;

dynamics of rotation; gravitation and planetary motion; hydrostatics and hydrodynamics; simple harmonic motion; wave motion and sound. Typically offered Fall Spring Summer.

### **PHYS 19400 - Freshman Physics Orientation**

Credit Hours: 1.00. Designed to provide incoming physics majors with the academic, survival, and computational skills to make a successful transition from high school to college. Discussion of opportunities within the Department including degree options, co-op program, undergraduate research, careers in physics, use of spreadsheet software, graphing packages, and drawing programs. Attendance and performance on assigned projects are the basis of the Pass/Not Pass requirement. Typically offered Fall Spring.

### **PHYS 21300 - Physics For Elementary Education**

**Prerequisite(s):** MA 11100 FOR LEVEL UG WITH MIN. GRADE OF C OR MA 11500 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 2.00. Development of basic concepts and theories in physical science. Not available for credit towards graduation in the College of Engineering and Sciences. Typically offered Fall Spring.

### **PHYS 22000 - General Physics**

**Prerequisite(s):** (MA 14700 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 14800 FOR LEVEL UG WITH MIN. GRADE OF C-) OR (MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 15400 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 4.00. Algebra-based. Mechanics, heat, and sound, for science students not specializing in physics, chemistry, or engineering. Typically offered Fall Spring Summer. CTL:IPS 1751 Algebra-based Physics I

### **PHYS 22100 - General Physics**

**Prerequisite(s):** PHYS 22000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 4.00. Algebra-based. Electricity & magnetism, light, and modern physics, for students not specializing in physics. Typically offered Fall Spring Summer. CTL:IPS 1752 Algebra-based Physics II

### **PHYS 24100 - Electricity And Optics**

**Prerequisite(s):** PHYS 15200 FOR LEVEL UG WITH MIN. GRADE OF C AND MA 16900 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Electrostatics, current electricity, electromagnetism, magnetic properties of matter. Electromagnetic waves, geometrical and physical optics. Typically offered Summer Fall Spring.

### **PHYS 25100 - Heat, Electricity And Optics**

**Prerequisite(s):** PHYS 15200 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 16400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 5.00. Calculus-based. Continuation of PHYS 15200. Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, AC/DC circuits, electromagnetism, magnetic properties of matter; geometrical and physical optics. Typically offered Fall Spring Summer.

### **PHYS 26100 - Electricity And Optics**

**Prerequisite(s):** PHYS 15200 FOR LEVEL UG WITH MIN. GRADE OF C- AND (MA 16400 FOR LEVEL UG WITH MIN. GRADE OF C- OR MA 16900 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 4.00. Calculus-based. Continuation of PHYS 15200. Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, AC/DC circuits, electromagnetism, magnetic properties of matter; geometrical and physical optics. Typically offered Fall Spring Summer.

### **PHYS 27000 - Special Topics In Physics**

Credit Hours: 1.00 to 5.00. Specialized topics in physics. Permission of instructor required. Typically offered Fall Spring Summer.

### **PHYS 29000 - Special Assignments**

Credit Hours: 0.00 to 3.00. Readings, discussions, written reports, or laboratory work selected for enrichment in special areas of physics. Permission of instructor required. Typically offered Fall Spring Summer.

### **PHYS 29400 - Sophomore Physics Seminar**

**Prerequisite(s):** PHYS 25100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 1.00. Required of sophomores majoring in any physics curriculum. Discussion of undergraduate research opportunities, upper-division courses, career opportunities, laboratory safety, use of the library including physics journals, and topics of current interest in physics. Typically offered Fall Spring.

### **PHYS 30300 - History And Philosophy Of Science**

**Prerequisite(s):** MA 11100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. An overview of the history of science, with an emphasis on the underlying philosophical ideas that have shaped and characterized the development of science. Their relevance to contemporary issues will also be explored. Typically offered Fall Spring.

### **PHYS 30500 - Intermediate Mathematical Physics**

**Prerequisite(s):** PHYS 25100 FOR LEVEL UG WITH MIN. GRADE OF C- OR PHYS 26100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An introduction and review of the mathematical techniques and procedures used in intermediate and advanced physics courses. Applications involving vector calculus, linear algebra, complex analysis, Fourier series and transforms, and second-order linear differential equations will be discussed. The course provides additional mathematical preparation for upper division physics. Typically offered every other year.

### **PHYS 30800 - Scientific Computation**

**Prerequisite(s):** PHYS 15200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An introduction to scientific problem solving using a computer. Students will be introduced to numerical methods for evaluating integrals and for solving algebraic and differential problems in physics. Typically offered Fall Spring.

### **PHYS 30900 - Scientific Computation II**

**Prerequisite(s):** PHYS 30800 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A second semester course in using modern computational methods to solve physics problems numerically. PHYS 30900 uses the methods developed in PHYS 30800 to address problems in mechanics, electricity and magnetism, and quantum physics. Typically offered Fall Spring.

### **PHYS 31000 - Intermediate Mechanics**

**Prerequisite(s):** PHYS 15200 FOR LEVEL UG WITH MIN. GRADE OF C- AND (MA 26200 FOR LEVEL UG WITH MIN. GRADE OF C- OR MA 24100 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 4.00. Elements of vector calculus; statics of particles and rigid bodies; theory of couples; principle of virtual work; kinematics; dynamics of particles and rigid bodies; work, power, and energy. Typically offered every other year.

### **PHYS 31100 - Quantum Physics I**

**Prerequisite(s):** MA 26400 FOR LEVEL UG WITH MIN. GRADE OF D- AND PHYS 34200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course discusses the limits of classical physics and the development of quantum physics. Topics will include: Planck's quantization hypothesis, the photoelectric effect, the wave theory of matter, the Uncertainty Principle, Bohr's atomic model, the Schrodinger equation, wave functions, the Hydrogen atom, operator methods, and the quantized simple harmonic oscillator. Typically offered Fall.

### **PHYS 32000 - Computational Physics**

Credit Hours: 1.00. Computational methods will be introduced and used to solve problems associated with electromagnetic phenomenon, mechanics or statistical mechanics and quantum physics. Typically offered Fall Spring.

### **PHYS 32200 - Intermediate Optics**

**Prerequisite(s):** PHYS 25100 FOR LEVEL UG WITH MIN. GRADE OF D- OR PHYS 26100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Wave optics and properties of light, including reflection, refraction interference. Fraunhofer and Fresnel diffraction dispersion, polarization, double refraction, introduction to lasers and holography. Typically offered Fall.

### **PHYS 32700 - Modern Physics Survey**

**Prerequisite(s):** PHYS 15200 AND PHYS 25100 AND PHYS 26100

Credit Hours: 4.00. A survey of modern physics topics, intended primarily for non-physics majors, organized in a mixture of lectures and activity-based laboratories. Topics will include: special relativity; pre-quantum phenomena; the Bohr atomic model; multi-electron atoms; cosmology and the Big Bang; radioactivity, fission, and fusion. Typically offered Fall Spring.

### **PHYS 33000 - Intermediate Electricity And Magnetism**

**Prerequisite(s):** (PHYS 25100 FOR LEVEL UG WITH MIN. GRADE OF C- OR PHYS 26100 FOR LEVEL UG WITH MIN. GRADE OF C-) AND MA 26400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Electrostatics; electric currents; magnetostatics; electromagnetic induction; Maxwell's equation; electromagnetic waves. Typically offered Fall Spring.

### **PHYS 34000 - Modern Physics Laboratory**

**Prerequisite(s):** PHYS 34200 FOR LEVEL UG WITH MIN. GRADE OF C (MAY BE TAKEN CONCURRENTLY) AND (PHYS 24100 FOR LEVEL UG WITH MIN. GRADE OF C OR PHYS 25100 FOR LEVEL UG WITH MIN. GRADE OF C OR PHYS 26100 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 1.00. Laboratory experiments to accompany PHYS 34200 or 34400. Typically offered Fall Spring.

### **PHYS 34200 - Modern Physics**

**Prerequisite(s):** PHYS 25100 FOR LEVEL UG WITH MIN. GRADE OF C- OR PHYS 26100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A survey of special and general relativity; quantum mechanics and phenomena in atomic, nuclear, and solid-state physics. Typically offered Spring.

### **PHYS 34300 - Modern Physics Laboratory**

Credit Hours: 1.00. Laboratory experiments to accompany PHYS 34200. Typically offered Spring.

### **PHYS 36000 - Quantum Mechanics**

**Prerequisite(s):** PHYS 34200 FOR LEVEL UG WITH MIN. GRADE OF C AND (PHYS 31000 FOR LEVEL UG WITH MIN. GRADE OF C OR PHYS 33000 FOR LEVEL UG WITH MIN. GRADE OF C)

Credit Hours: 3.00. Historical development of quantum mechanics, wave packets, uncertainty principle, Schrodinger equation, operators, the hydrogen atom, electron spin, angular momentum, perturbation theory, and other selected topics. Typically offered Spring.

### **PHYS 38000 - Advanced Physics Laboratory**

**Prerequisite(s):** PHYS 31000 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) AND PHYS 34200 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) AND PHYS 34300 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) AND PHYS 33000 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. An introduction and survey of modern experimental topics in advanced physics, including areas such as: Interferometry, Zeeman Effect, Compton Effect, Nuclear Magnetic Resonance, Nuclear counting and half-life measurements. An introduction to data analysis will also be included. Typically offered Fall.

### **PHYS 40200 - Senior Research I**

Credit Hours: 2.00. Experiential learning undergraduate research course in physics directed and mentored by physics faculty during student's penultimate semester. Background preparation, specialized training, and identification of a final research project. Submission of a formal research proposal and initial work towards completion. Permission of instructor required. Typically offered Fall Spring.

### **PHYS 40300 - Senior Research II**

**Prerequisite(s):** PHYS 40200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Experiential learning undergrad research course in physics directed and mentored by physics faculty during student's final semester. Continuation and completion of work begun in Senior Research I; Preparation and presentation of results in multiple formats. Permission of instructor required. Typically offered Fall Spring.

### **PHYS 41200 - Quantum Physics II**

**Prerequisite(s):** PHYS 31100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A continuation of the concepts introduced in PHYS 31100, including more advanced topics in modern quantum mechanics. Topics will include: addition of angular momenta, scattering theory, identical particles, time-independent and time-dependent perturbation theory, and the WKS approximation. Typically offered Fall Spring.

### **PHYS 41800 - Thermal And Statistical Physics**

Credit Hours: 3.00. Temperature, equations of state, first and second laws of thermodynamics, entropy and applications, kinetic theory, transport processes, statistical mechanics. Typically offered Fall Spring Summer.

### **PHYS 46900 - Research In Physics**

Credit Hours: 1.00 to 5.00. Undergraduate research, which will qualify as an Experiential Learning experience. Admission by special permission. Permission of instructor required. Typically offered Fall Spring Summer.

### **PHYS 47000 - Special Topics In Physics**

Credit Hours: 1.00 to 5.00. Topics vary. Permission of department required. Typically offered Fall Spring Summer.



**PHYS 49400 - Junior-Senior Physics Seminar**

**Prerequisite(s):** PHYS 29400 FOR LEVEL UG WITH MIN. GRADE OF C- AND PHYS 33000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 1.00. Major emphasis on developing skills in oral and written presentations by students. The subject matter can be library material and/or accomplishments in undergraduate or co-op research. Typically offered Fall Spring.

**PHYS 51000 - Physical Mechanics**

**Prerequisite(s):** PHYS 31000 FOR LEVEL UG WITH MIN. GRADE OF B- (MAY BE TAKEN CONCURRENTLY) AND PHYS 33000 FOR LEVEL UG WITH MIN. GRADE OF B- AND MA 26200 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. Mechanics of particles, rigid bodies, and vibrating systems. Typically offered Fall.

**PHYS 51500 - Thermal And Statistical Physics**

**Prerequisite(s):** PHYS 31000 FOR LEVEL UG WITH MIN. GRADE OF B- AND MA 51000 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. Equilibrium states, the concept of heat, and the laws of thermodynamics; the existence and properties of the entropy; different thermodynamic potentials and their uses; phase diagrams; introduction to statistical mechanics and its relation to thermodynamics; treatment of ideal gases. Typically offered Fall Spring.

**PHYS 51700 - Statistical Physics**

**Prerequisite(s):** PHYS 34200 FOR LEVEL UG WITH MIN. GRADE OF B- AND PHYS 51000 FOR LEVEL GR WITH MIN. GRADE OF B-

Credit Hours: 3.00. Laws of thermodynamics; Boltzmann and quantum statistical distributions, with applications to properties of gases, specific heats of solids, paramagnetism, black-body radiation, and Bose-Einstein condensation; Boltzmann transport equation and transport properties of gases; Brownian motion and fluctuation phenomena. Typically offered Fall Spring Summer.

**PHYS 53000 - Electricity And Magnetism**

**Prerequisite(s):** PHYS 33000 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. Electrostatic problems; theory of dielectrics; theory of electric conduction; electromagnetic effects due to steady and changing currents; magnetic properties of matter; Maxwell's equations; electromagnetic radiation. Typically offered Fall.

**PHYS 54500 - Solid-State Physics**

**Prerequisite(s):** PHYS 55000 FOR LEVEL GR WITH MIN. GRADE OF B-

Credit Hours: 3.00. Crystal structure; lattice vibrations and electronic band structure of crystals; electrical, optical, and thermal properties of solids; transport and other nonequilibrium phenomena in uniform and nonuniform materials. Typically offered Fall Spring.

**PHYS 55000 - Introduction To Quantum Mechanics**

**Prerequisite(s):** (PHYS 31000 FOR LEVEL UG WITH MIN. GRADE OF B- AND PHYS 33000 FOR LEVEL UG WITH MIN. GRADE OF B- AND PHYS 34200 FOR LEVEL UG WITH MIN. GRADE OF B- AND MA 36200 FOR LEVEL UG WITH MIN. GRADE OF B- OR MA 51000 FOR LEVEL GR WITH MIN. GRADE OF B-)

Credit Hours: 3.00. Brief historical survey of the development of quantum mechanics; wave-packets, uncertainty principle, wave functions, operators, Schrodinger equation with application to one-dimensional problems, the hydrogen atom, electron spin, selected topics in perturbation theory, scattering theory, and compounding of angular momenta. Not available for students with credit in PHYS 36000 or 46000. Typically offered Fall.

**PHYS 55600 - Introductory Nuclear Physics**

**Prerequisite(s):** PHYS 55000 FOR LEVEL GR WITH MIN. GRADE OF B-

Credit Hours: 3.00. Theory of relativity, brief survey of systematics of nuclei and elementary particles, structure of stable nuclei, radioactivity, interaction of nuclear radiation with matter, nuclear reactions, particle accelerators, nuclear instruments, fission, nuclear reactors. Typically offered Spring.

**PHYS 56400 - Introduction To Elements Particle Physics**

**Prerequisite(s):** (PHYS 36000 FOR LEVEL UG WITH MIN. GRADE OF B- OR PHYS 46000 FOR LEVEL UG WITH MIN. GRADE OF B- AND PHYS 46100 FOR LEVEL UG WITH MIN. GRADE OF B- OR PHYS 55000 FOR LEVEL GR WITH MIN. GRADE OF B-)

Credit Hours: 3.00. This course brings students up to the current status of research in elementary particle physics. The focus of the course is the construction of the Standard Model with emphasis on the electroweak theory. The seminal experiments that confirmed the predictions of the Standard Model is presented. The solar neutrino problem, the search for nonzero neutrino masses, and the efforts to construct a theory which unifies all interactions, including gravity, is discussed. Typically offered Spring.

### **PHYS 57100 - Selected Topics In Physics**

Credit Hours: 3.00. Specialized topics in physics selected from time to time. Typically offered Fall Spring Summer.

### **PHYS 59000 - Reading And Research**

Credit Hours: 1.00 to 3.00 (Calumet, Fort Wayne) 1.00 to 6.00 (West Lafayette, IUPUI). Reading and research in Physics. Permission of instructor required. Typically offered Fall Spring Summer.

### **PHYS 60000 - Methods Of Theoretical Physics I**

Credit Hours: 3.00. This course is designed to provide first-year physics graduate students with the mathematical background for subsequent studies of advanced mechanics, electrodynamics, and quantum theory. Topics treated include functions of complex variable, ordinary and partial differential equations, eigenvalue problems and orthogonal functions. Green's functions, matrix theory, and tensor analysis in three and four dimensions. Typically offered Fall.

### **PHYS 60100 - Methods Of Theoretical Physics II**

**Prerequisite(s):** PHYS 60000 FOR LEVEL GR WITH MIN. GRADE OF B-

Credit Hours: 3.00. A continuation of PHYS 600. Prerequisite: PHYS 60000. Typically offered Fall Spring.

## **Polish**

### **PLSH 10100 - Polish Level I**

Credit Hours: 3.00. Introduction to Polish. Typically offered Fall Spring Summer.

### **PLSH 10200 - Polish Level II**

**Prerequisite(s):** PLSH 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Continuation of PLSH 101 - Polish Level I. Typically offered Fall Spring Summer.

### **PLSH 20100 - Polish Level III**

**Prerequisite(s):** PLSH 10200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course completes the introduction of cases in the Polish language. Students continue to develop listening and speaking skills and to build reading and writing skills by analyzing authentic texts. Emphasis on viewing and commenting on films. Typically offered Fall Spring Summer.

### **PLSH 20200 - Polish Level IV**

**Prerequisite(s):** PLSH 20100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This is the second part of a two-semester second-year sequence in Polish. The course will provide students with conversation, writing ability, reading, and capabilities of understanding Polish poetry, newspapers, other reading materials and cinema. Typically offered Fall Spring Summer.

## **Political Science**

### **POL 10000 - American Public Affairs**

Credit Hours: 3.00. A survey of current public affairs in America designed to help students become conscious of the societal issues of our times. Typically offered Fall Spring Summer.

### **POL 10100 - American Government And Politics**

Credit Hours: 3.00. A study of the nature of democratic government, the U.S. Constitution, federalism, civil rights, political dynamics, the presidency, Congress, and the judiciary. Typically offered Summer Fall Spring. CTL:ISH 1002 American Government

### **POL 10200 - American Government In Practice**

Credit Hours: 3.00. This course is intended to give students an opportunity to study the nature of democratic government, the U.S. Constitution, federalism, civil liberties and rights, political dynamics, the presidency, Congress, and the judiciary. Typically offered Spring.

### **POL 10400 - Political Participation**

Credit Hours: 3.00. An introduction to the major dimensions of citizen politics in America: voting behavior, political socialization of children and adults, political opinion and culture, leadership recruitment and partisan participation. Typically offered Fall Spring Summer.

### **POL 12000 - Introduction To Public Policy And Public Administration**

Credit Hours: 3.00. An introduction to the fields of public policy and public administration. Processes of policy formation and administration are examined. Different approaches to evaluating and improving public policies are discussed. Typically offered Summer Fall Spring.

### **POL 13000 - Introduction To International Relations**

Credit Hours: 3.00. An analysis of the fundamentals of international law, organization, and politics, particularly as relevant to contemporary international relations. Typically offered Summer Fall Spring. CTL:ISH 1003 Introduction To World Politics

### **POL 14100 - Governments Of The World**

Credit Hours: 3.00. An introduction to the politics and government in selected foreign countries. The course presents the tools and background needed to understand contemporary events in the world beyond the United States. Readings and discussions pay special attention to democratization and development. Typically offered Summer Fall Spring.

### **POL 19000 - The Politics Of Change**

Credit Hours: 3.00. An introductory survey of the political forces at play in the processes of social, economic, and political change. Among topics to be considered are the politics of the post-industrial revolution, environmental control, civil rights, the role of women in society, international cooperation and conflict. Emphasis will be placed on the political forces and processes involved in change and the resultant public policies. Typically offered Fall Spring.

### **POL 20000 - Introduction To The Study Of Political Science**

Credit Hours: 3.00. Introduction to basic concepts and methods of political science. Basic concepts including, among others, power, justice, authority, ideology, and democracy, and a variety of quantitative and qualitative methods of analysis will be explored. Typically offered Summer Fall Spring.

### **POL 20200 - Introduction To Political Theory**

Credit Hours: 3.00. An introductory study of political concepts and systems of political thought from classical to modern times. Typically offered Fall Spring Summer.

### **POL 22100 - Introduction To Science And Government**

Credit Hours: 3.00. A survey of major policy issues associated with scientific and technological advances. Special attention is focused upon the organization of science and technology, the determination of science and policy, and the role of government in support of research and development. Typically offered Fall Spring Summer.

### **POL 22200 - Women, Politics, And Public Policy**

Credit Hours: 3.00. An introduction to women's participation in politics, with an emphasis on America. Structural and attitudinal conditions limiting women's political roles and contemporary efforts to change women's status in society through politics. Typically offered Summer Fall Spring.

### **POL 22300 - Introduction To Environmental Policy**

Credit Hours: 3.00. (FNR 22310) Study of decision making as modern societies attempt to cope with environmental and natural resources problems. Focuses on the American political system, with some attention to the international dimension. Current policies and issues will be examined. Typically offered Fall Spring.

### **POL 23100 - Introduction To United States Foreign Policy**

Credit Hours: 3.00. Designed to introduce students to the major themes and issues in contemporary U.S. foreign policy. Lectures, discussion, and readings will examine such areas as U.S. relationships with the major powers, the Third World, and international organizations. Typically offered Fall Spring.

### **POL 23200 - Contemporary Crises In International Relations**

Credit Hours: 3.00. The focus of this course will be on major world crises, such as in the Middle East and Southern Africa, and ways in which these crises may be analyzed. Typically offered Fall Spring.

### **POL 23300 - Introduction to The Study Of Law**

Credit Hours: 3.00. An introduction to the theory and practice of law, including the process of legal research, legal analysis of facts as applied to pertinent law, and legal writing. Typically offered Fall Summer.

### **POL 30000 - Introduction To Political Analysis**

**Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An introduction to the study of politics, its basic concepts and major areas of concern; also review of important research techniques, including methods of data collection and analysis. Typically offered Summer Fall Spring.

### **POL 30500 - Technology And Society**

Credit Hours: 3.00. An introduction to the interactions of technology and society, the impact of engineering and technological solutions, and the role of professionals, this class will focus on contemporary societal and global topics and themes such as: Environmental issues involving sustainable development, design for recycling, and other critical themes. Contemporary international issues, such as trade and trade barriers, multinational companies, and distribution of resources such as oil and minerals; and the importance of cultural, religious, and socio-economic differences, values, international relations, living and working in another country, the impact of poverty and economic differences. Typically offered Summer Fall Spring.

### **POL 30600 - The United States In The 1960's**

**Prerequisite(s):** HIST 15100 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 15200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A description and analysis of major domestic and foreign, social, political, military and diplomatic issues confronting the United States in the 1960's and approaches and efforts to resolve these issues. The class will utilize the 1960's as laboratory to provide students with both historical and political science skills and approaches to the issues and themes of a particular period. May be taken for history or political science credit. Not open to students with credit in HIST 306. Typically offered Fall Spring Summer.

### **POL 30800 - United States Foreign Policy And Latin America**

Credit Hours: 3.00. This course examines US foreign policy toward countries in Latin America. Encompassing an analysis of the US's historical role in the politics of the Western hemisphere, the course pays particular attention to US foreign policy in the twentieth century. Important themes include foreign policy during the Cold War, domestic insurgency and revolution, and such economic concerns as trade and foreign direct investment. Typically offered Fall Spring Summer.

### **POL 30900 - The Middle East**

**Prerequisite(s):** HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A survey beginning with the period of European involvement in the Ottoman Empire up to the present. The course includes the study of political Zionism and Arab nationalism, the role of the major powers between the two World Wars and that of the United States and the Soviet Union during the Cold War, and developments in the Middle East in the post-Cold War era. Not open to students with credit in HIST 309. Typically offered Fall Spring Summer.

### **POL 31100 - Congress And The President**

**Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An analysis of policy formation which stresses the linkage between the Congress and the President, legal, behavioral, and normative approaches will be considered. Typically offered Fall Spring Summer.

### **POL 31200 - American Political Thought**

**Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An analytical survey of the American contribution to Western political thought from the colonial period to the present day. The major themes and concepts of the American tradition are analyzed through study of the writings of representative thinkers, with special attention to the ideas which have affected the development of American political institutions. Typically offered Fall Spring Summer.

### **POL 31400 - The President And Policy Process**

**Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A study of presidential leadership as the embodiment of social forces and as reflective of the personality of the incumbent; the president as national leader reflecting national myths and ideologies; the growth of the presidency; issues and forces affecting the continuity of presidential leadership; the degree of institutionalization of the presidency. Typically offered Fall Spring.

### **POL 31500 - Public Opinion And Elections**

**Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Contemporary public opinion, political socialization, and voting behavior in America. Typically offered Fall Spring Summer.

### **POL 31600 - Family Law**

**Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- OR HDFS 20500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This class provides an Introduction to basic concepts in family law including formal and common-law marriage, domestic violence, dissolution and property distribution, child custody and the parent-child relationship. Focus will be on laws of Indiana. Typically offered Fall Spring Summer.

### **POL 32000 - Introduction To Public Policy Analysis**

**Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Examination of public policy analysis models and approaches and current public policy questions. The course will emphasize application of analytical methods to the examination of contemporary policy issues in the United States. Typically offered Fall Spring.

### **POL 32300 - Comparative Environmental Policy**

Credit Hours: 3.00. Comparative study of environmental policy development and processes in industrialized democracies, former and current communist states, and developing nations. Typically offered Summer Fall Spring.

### **POL 32600 - Black Political Participation In America**

Credit Hours: 3.00. An examination of African American political participation in the United States. Analyzes political culture and socialization, with a focus on the interaction between African Americans and actors, institutions, processes, and policies of the American system of politics and governance. Typically offered Fall Spring.

### **POL 33000 - Politics Of Lake County**

**Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The study of Lake County politics focusing upon the selection of political leaders; the relation of the county to municipalities, townships, the state and federal government and public policy. Party officials and government office holders will be a resource for the course. Typically offered Fall Spring Summer.

### **POL 33100 - Politics And Religion**

Credit Hours: 3.00. Religion and Politics examines the relationship between religious faith and political life from philosophical, theological, and behavioral perspectives. The class will focus in this course on perspectives from the intellectual heritage of the Western world. Therefore the work of thinkers, ancient and modern, will be examined. In addition, empirical works on the consequences of religious beliefs on political behavior will also be reviewed. Topics will range from medieval scholastic philosophy to contemporary international relations. Religion will be viewed as one of the major driving forces of national and international politics in the 21st century. Typically offered Fall Spring.

### **POL 33300 - Political Movements**

**Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A study of political change ranging from legal reform to peaceful protest to violent revolution. Emphasis on ideologies and strategies of change relevant to consideration of contemporary political change. Typically offered Fall Spring Summer.

### **POL 34400 - Introduction To The Politics Of The Third World**

Credit Hours: 3.00. Introduction to the politics of Africa, Asia, Latin America, and the Middle East. Special emphasis on problems of modernity and tradition; social mobilization and political decay; revolution and reform; communalism and imperialism. Typically offered Fall Spring.

### **POL 34500 - West European Democracies In The Post-Industrial Era**

Credit Hours: 3.00. An introduction to the political institutions and processes in West European democracies. The course focuses on the ability of Western democracy to survive the transition to the post-industrial era. Typically offered Fall Spring.

### **POL 34600 - Law And Society**

**Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Nature and development of law and legal institutions in historical, comparative, and contemporary perspectives; interrelationship of law, morality, and custom; legal change and social change; and the legal profession. Typically offered Fall Spring Summer.

### **POL 34601 - Family Law**

**Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF C- OR HDFS 20500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This class provides an introduction to the basic concepts in family law including formal and common-law marriage, domestic violence, dissolution and property distribution, child custody and the parent-child relationship. Focus will be on Indiana law and procedures. Typically offered Fall Spring, Summer.

### **POL 34900 - Intro To Jewish Studies**

**Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. (HIST 34900 and IDIS 33000) An interdisciplinary seminar touching on many aspects of the Jewish experience, from biblical times to the present. The course introduces students to aspects of the rich and multi-faceted history, literature, theology, and culture of Jews and Judaism from antiquity to the present: from the ancient Near East to Europe, America and back to the modern Near East. The course begins with an examination of basic concepts of Judaism, such as God, Torah, People, Land, and Identity. It involves concepts from Jewish historical, theological, and literary roots from the formation of ancient Israel to contemporary Israel and Jewish-American Culture. Typically offered Fall Spring Summer.

### **POL 35000 - Foundations Of Western Political Theory: From The Renaissance To Marx**

Credit Hours: 3.00. A survey of modern political thought from Machiavelli through Marx. Major writers studied include Machiavelli, Hobbes, Locke, Rousseau, the Utilitarians, and Marx. Typically offered Fall Spring Summer.

### **POL 35300 - Current Political Ideologies**

**Prerequisite(s):** POL 10000 FOR LEVEL UG WITH MIN. GRADE OF D- OR POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- OR POL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- OR POL 10400 FOR LEVEL UG WITH MIN. GRADE OF D- OR POL 12000 FOR LEVEL UG WITH MIN. GRADE OF D- OR POL 13000 FOR LEVEL UG WITH MIN. GRADE OF D- OR POL 14100 FOR LEVEL UG WITH MIN. GRADE OF D- OR POL 19000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Liberalism, conservatism, socialism, fascism, communism, and other political ideologies.

Prerequisite: A 10000-level POL course with a minimum grade of D-. Typically offered Fall Spring Summer.

### **POL 35400 - Civil Liberties And The Constitution**

**Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A study of the politics of civil rights and liberties in the United States focusing upon the Constitution, legislation, court decisions, and executive implementation. Typically offered Fall Spring Summer.

### **POL 35500 - Computer Applications In Public Administration**

**Prerequisite(s):** POL 30000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A problem solving introduction to microcomputer utilization in local, state, and federal government agencies. The course will address the role of computers in government decision -making. The history of the microcomputer's emergence in the public administration environment will be presented. In addition, the student will be introduced to customization of popular software packages to address specific problems. Typically offered Fall Spring Summer.

### **POL 35600 - Personnel Management In Government**

**Prerequisite(s):** POL 12000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A study of the working of personnel management systems in local, state and federal agencies emphasizing recruitment, classification, compensation, and employee services. Typically offered Fall Spring Summer.

### **POL 35700 - Budgeting In The Public Sector**

**Prerequisite(s):** POL 12000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Study of budgetary process in public agencies emphasizing the preparation and implementation of budgets by the public agencies. Political aspects of budgeting will be considered. Typically offered Fall Spring Summer.

### **POL 35800 - Administrative Law And Ethics**

**Prerequisite(s):** POL 12000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Introduction to administrative law and ethics as they relate to the working of public agencies. Ethical codes developed by the professional organization of public administrators (e.g. ASPA) will be considered. Typically offered Fall Spring Summer.

### **POL 35900 - Administrative Behavior In Public Agencies**

**Prerequisite(s):** POL 12000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Study of organizational and interpersonal behavior in government agencies. Applications of behavioral theories in relation to organizational effectiveness will be emphasized. Typically offered Fall Spring Summer.

### **POL 36000 - Women And The Law**

Credit Hours: 3.00. An introductory survey of women's legal status in America. Topics include constitutional law, marriage and divorce, reproductive rights, employment discrimination, and crimes of violence. Typically offered Fall Spring Summer.

### **POL 36400 - Law, Ethics, And Public Policy**

**Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is divided into three sections. Justice as liberty examines the notion of a right to privacy. Justice as equality focuses on economic rights. Finally, justice as community addresses the notion of duties. Permission of instructor required. Typically offered Fall Spring Summer.

### **POL 37000 - Introduction To Comparative State Politics**

**Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An introduction to the structure and process of state government, including the legal and political relationships between the state and local units of government. Typically offered Fall Spring.

**POL 37100 - Introduction To Comparative Urban Politics**

**Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The politics of governing urban areas, including the selection of political leaders, and citizen participation in the decision making of the central city. Special attention will be given to the integration of minorities into the political and social life of the city. Typically offered Fall Spring.

**POL 37200 - Indiana Government And Politics**

**Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An examination of the political and governmental organization of the state of Indiana. Includes the political and historical development of Indiana state government and comparison of policies and institutions with those of other states. Typically offered Fall Spring Summer.

**POL 38000 - The Politics Of Bureaucracy**

**Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An examination of bureaucratic organization in government. Organization theory and internal politics, foundations of bureaucratic power, and the relationship between bureaucracies and political culture, parties, pressure groups, and other structures of government. Typically offered Fall Spring Summer.

**POL 38800 - The World Of Ideas I**

**Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The first half of a two-semester chronological sequence based on reading and discussing source materials and documents drawn from Political Science, Economics, History, Sociology, Psychology, and philosophy. This course is designed to familiarize students with the major ideas and ideals which have shaped world civilization. Major themes of this course are Liberty, Human Nature, and The Individual and Society. Not open to students with credit in HIST 38800 or PHIL 38800. Typically offered Fall Spring Summer.

**POL 38900 - The World Of Ideas II**

**Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- OR HIST 10400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The second half of a two-semester chronological sequence based on reading and discussing primary source materials and documents drawn from Political Science, Economics, History, Sociology, Psychology, and philosophy. This course is designed to familiarize students with the major ideas and ideals which have shaped world civilization. Major themes of this course are Liberty, Human Nature, and The Individual and Society. Not open to students with credit in HIST 38900 or PHIL 38900. Typically offered Fall Spring Summer.

**POL 39000 - Topics In Political Science**

**Prerequisite(s):** POL 10000 FOR LEVEL UG WITH MIN. GRADE OF D- OR POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D- OR POL 10200 FOR LEVEL UG WITH MIN. GRADE OF D- OR POL 10400 FOR LEVEL UG WITH MIN. GRADE OF D- OR POL 12000 FOR LEVEL UG WITH MIN. GRADE OF D- OR POL 13000 FOR LEVEL UG WITH MIN. GRADE OF D- OR POL 14100 FOR LEVEL UG WITH MIN. GRADE OF D- OR POL 19000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Topics vary. Prerequisite: A 10000-level POL course or consent of Instructor. Typically offered Fall Spring Summer.

**POL 39200 - Student Government**

Credit Hours: 3.00. Students elected to Student Government will examine theories of representation, leadership, and deliberative democracy. They will put these skills into practice using parliamentary procedure to represent student interests through the legislative process, organizing campus meetings and engaging with the community. The prerequisite is to be elected to Student Government. Typically offered Fall Spring.

**POL 40000 - Principles Of Empirical Political Analysis**

**Prerequisite(s):** POL 30000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An intermediate critical treatment of the scientific approach to the study of political behavior. Focus on the advantages and problems of analyzing political phenomena in terms of the following elements of scientific methodology: classification, measurement, generalization, verification, reliability, validity, casual inference and prediction. The importance of these elements for understanding politics will be illustrated by analyzing empirical studies drawn from various fields of political behavior. Typically offered Fall Spring Summer.

**POL 40100 - Practicum In Local Government****Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Observation and supervised participation on an official community committee or board, in a political campaign, or with professional governmental staffs. Readings and class meetings to integrate theory and experience. This course requires five hours per week of field experience. Typically offered Spring Fall Summer.

**POL 40300 - Field Experience In Political Science****Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 1.00 to 3.00. Students are able to earn credit for internships in federal, state, and local government offices as well as with political parties, campaign organizations, nonprofit organizations, legislative bodies, and interest groups. Credit and course requirements to be arranged with the instructor. Permission of instructor required. Typically offered Fall Spring Summer.

**POL 40400 - United States Policy Making Elite****Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A study of the logical, empirical and normative dilemmas in theories of democratic governance with analysis of contemporary democratic systems. Typically offered Fall Spring Summer.

**POL 40500 - Research Seminar In Public Administration And Policy**

Credit Hours: 3.00. A senior seminar to consider current research literature in public administration policy. Each class member will prepare a major research paper for public presentation. Typically offered Fall Spring Summer.

**POL 40600 - Internship In A Public Agency**

Credit Hours: 1.00 to 12.00. This course requires a Senior standing in Political Science. Students are able to earn credit for internships in federal, state, and local government offices as well as with political parties, campaign organizations, nonprofit organizations, legislative bodies, and interest groups. The students will be supervised by the agency and an academic advisor. Credit and course requirements to be arranged with the instructor.

**POL 41000 - Political Parties And Politics**

Credit Hours: 3.00. An analysis of the nature and functioning of U.S. political parties in terms of social and economic forces that shape our political system. Interactions among political parties, pressure groups, and formal government structures are emphasized throughout. Special attention is devoted to political leadership, nominating processes, campaign management, voting behavior, and other important aspects of American politics. Typically offered Fall Spring.

**POL 41100 - Congress: Structure And Functioning**

Credit Hours: 3.00. A study of how Congress actually operates. Formal and informal power structures within both chambers and roles of the individual members of Congress are analyzed. Attention is directed to latent, as well as manifest, functions of legislative, investigative, and other major activities of Congress. The problem of bringing expertise to bear on the legislative process is considered throughout. Typically offered Fall Spring.

**POL 42800 - The Politics Of Regulation****Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Politics and policies of federal and state regulatory agencies. Explanations of regulatory agency behavior, arguments for and against government regulation, and alternatives to government regulation. Typically offered Fall Spring Summer.

**POL 42900 - Contemporary Political Problems**

Credit Hours: 3.00. Contemporary political problems in the United States affecting the interpretation of democracy, human rights and welfare, social pressures, and intergovernmental relations. Typically offered Fall Spring.

**POL 43300 - International Organization****Prerequisite(s):** POL 13000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A study of the structure and functions of the United Nations and associated agencies, with an emphasis on the role of this system in contemporary international relations. Typically offered Fall Spring.

**POL 43500 - International Law****Prerequisite(s):** POL 13000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A study of international legal theories, principles, and practices, with an emphasis on the role and utility of law in contemporary international relations. Typically offered Fall Spring.

**POL 43900 - United States Foreign Policy Making****Prerequisite(s):** POL 13000 FOR LEVEL UG WITH MIN. GRADE OF D-



Credit Hours: 3.00. An analysis of the decision-making process in United States foreign policy. Typically offered Fall Spring.

### **POL 44100 - Violence And Politics**

Credit Hours: 3.00. A cross-national approach to the problem of violence in politics. Primarily devoted to the study of collective political violence. Special attention will be given to theoretical explanations of the causes of violence and contemporary patterns. Typically offered Fall Spring.

### **POL 44200 - Government And Politics In Russia**

**Prerequisite(s):** POL 14100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Analysis of Russian political culture and the Russian political tradition. History, organization, and functioning of the governmental apparatus. The role of the social organizations, interest groups, and elites. Models of the Russian political system. Typically offered Fall Spring Summer.

### **POL 45400 - Political Economy From Smith To Keynes**

**Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The capitalist political economists, including Adam Smith, Malthus, Ricardo, the Mills, the Marginalists, and Keynes; the moral, social, psychological, and political assumptions and implications of their theoretic works and their theories of history and models of human behavior. Typically offered Fall Spring Summer.

### **POL 46000 - Judicial Politics**

**Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A survey of judicial processes as they operate in America. Both trial courts and appellate courts will be examined in light of the procedures with which they operate. The external social, economic, and political pressures surrounding courts and the impact courts have on society will be considered. Typically offered Fall Spring.

### **POL 46100 - Constitutional Law I**

**Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A survey of selected areas of constitutional law, considering the political and social influences as well as the doctrinal forces that have produced these policies and interpretations. Typically offered Fall Spring.

### **POL 49000 - Topics In Political Science**

**Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Topics vary. Typically offered Fall Spring Summer.

### **POL 49100 - Political Science Senior Seminar**

Credit Hours: 3.00. This is a variable-title seminar focusing on contemporary issues in political science at the senior level. It is part of the "capstone" experience for political science majors. Typically offered Fall Spring.

### **POL 49300 - Interdisciplinary Undergraduate Seminar**

**Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 1.00 to 3.00. An undergraduate seminar devoted to an interdisciplinary examination of social, economic, political, and intellectual movements, using the faculty resources of the participating departments. Subject matter will vary. Each offering of the seminar will be approved by a committee of department heads from the sponsoring departments. Permission of instructor required. Typically offered Fall Spring.

### **POL 49800 - Individual Studies In Political Science**

**Prerequisite(s):** POL 10100 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Individual Studies In Political Science. Typically offered Fall Spring Summer.

### **POL 50100 - Political Science: Methodology**

Credit Hours: 3.00. Introduction to the basic techniques of statistical analysis applicable to political science data. Elementary descriptive statistics and statistical inference. Introduction to multivariate analysis. Permission of instructor required. Typically offered Fall Spring.

### **POL 52300 - Environmental Politics And Public Policy**

Credit Hours: 3.00. The political problems of natural resource use and environmental quality. Theoretical foundations for environmental policy and its evaluation, the political context of environmental policy, principles of administering environmental policies, and the significance of international law and institutions for environmental policies. Typically offered Summer Fall Spring.

### **POL 59000 - Directed Reading In Political Science**

Credit Hours: 1.00 to 3.00. A reading course directed by the instructor in whose field of specialization the content of the reading falls. Approval of each reading project must be secured from the department. Permission of instructor required. Typically offered Fall Spring.

## **Portuguese**

### **PTGS 10100 - Portuguese Level I**

Credit Hours: 3.00. A beginning course in Portuguese. Typically offered Fall Spring Summer.

### **PTGS 10200 - Portuguese Level II**

**Prerequisite(s):** PTGS 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Continuation of PTGS 10100. Typically offered Fall Spring Summer.

## **Psychology**

### **PSY 10300 - Psychology First Year Experience**

Credit Hours: 3.00. This course exposes early psychology majors to the breadth of disciplines in the field, and gives the student the tools to succeed both as a psychology major and beyond graduation. Topics covered include how to best succeed in college classes, pitfalls that act as a barrier to success, and professional skill building like writing resumes/CVs, cover letters, and doing well in interviews. Typically offered Fall Spring Summer.

### **PSY 12000 - Elementary Psychology**

Credit Hours: 3.00. Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking. Typically offered Fall Spring Summer.

### **PSY 20000 - Introduction To Cognitive Psychology**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A survey of psychology as the science of mental life, covering theories and research in perception, reading, attention, consciousness, imagery, memory and its improvement, problem solving, creativity, decision making, and artificial intelligence. Typically offered Summer Fall Spring.

### **PSY 20100 - Introduction To Statistics In Psychology**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An introduction to the development and application of statistical, quantitative, and measurement techniques pertinent to the psychological sciences. Fundamental concepts of numerical assignment, sampling theory, distribution functions, experimental design, inferential procedures, and statistical control. Typically offered Summer Fall Spring.

### **PSY 20200 - Introduction To Quantitative Topics In Psychology**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Continuation of PSY 20100. Fundamental concepts of test theory, introduction to applied psychological testing, the scaling of data, and an introduction to mathematical models of psychological phenomena. Typically offered Fall Spring.

### **PSY 20300 - Introduction To Research Methods In Psychology**

**Prerequisite(s):** PSY 20100 FOR LEVEL UG WITH MIN. GRADE OF C- OR (BHS 20100 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C- AND PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 3.00. The use of scientific method in psychology. Lecture covers principles of collecting and interpreting data, using examples of research from many areas of psychology. In the laboratory portion, the student uses many different techniques from various areas of psychology. Typically offered Summer Fall Spring.

### **PSY 20500 - Testing And Measurement**

**Prerequisite(s):** BHS 20100 FOR LEVEL UG WITH MIN. GRADE OF C- OR (PSY 20100 FOR LEVEL UG WITH MIN. GRADE OF C- AND PSY 50000 FOR LEVEL UG WITH MIN. GRADE OF C- AND MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C-)

Credit Hours: 3.00. Fundamental concepts of test theory, introduction to applied psychological testing, the scale of data, and the interpretation of test results. Not open to students with credit in PSY 50500. Typically offered Fall Spring Summer.

### **PSY 21000 - Introduction To Human Development**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An introduction to the development of individuals from conception through adulthood and aging. Physical growth, social and emotional behavior, cognitive and language development are covered. Typically offered Fall Spring Summer.

**PSY 22000 - Brain And Behavior: An Introduction**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A survey of the relation of brain structure and function to behavior. Topics covered include sensation and perception, the effect of early experience on the growing brain, learning, motivation, sleep and dreaming, language and thought, abnormal behavior and brain injury. Typically offered Summer Fall Spring.

**PSY 23500 - Child Psychology**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Not open to students with credit in PSY 36000. General principles of children's behavior and development, from conception to adolescence, including sensory and motor development, and basic psychological processes such as learning, motivation, and socialization. Typically offered Summer Fall Spring.

**PSY 23900 - The Psychology Of Women**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. The purpose of the course is to provide an overview of the psychology of women. Topics include stereotyping, women and achievement, aggression and power, the psychological concept of androgyny, and attitudes toward feminism. Typically offered Summer Fall Spring.

**PSY 24000 - Introduction To Social Psychology**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Not open to students with credit in SOC 34000. A broad survey in current knowledge about human social behavior. Topics covered include aggression, attraction and love, social influence, attitudes and attitude change, nonverbal communication, leadership, prejudice and discrimination, and application of social psychology to law, medicine, and other fields. Typically offered Fall Spring Summer. CTL:ISH 1024 Social Psychology

**PSY 24400 - Introduction To Human Sexuality**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course will provide a broad survey of research on human sexuality from a psychosocial perspective. Topics covered include research methods, gender identity, sexual orientation, reproductive anatomy, typical and atypical sexual behavior, and sexual difficulties and their treatments. Typically offered Fall Spring. CTL:ISH 1022 Human Sexuality

**PSY 25000 - Psychology of Adjustment**

Credit Hours: 3.00. A survey of principles of human adjustment, with emphasis on integration of self, perception, control, behavior, and relationships. Solutions to selected problems and anxieties are discussed to illustrate effecting change, building emotional stability, and preventing maladjustment. Typically offered Fall Spring.

**PSY 25100 - Health Psychology**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Health psychology is concerned with the interaction between behavior and health and illness. It includes the psychological study of the relationship between health and lifestyle, stress and coping, and health-injurious behaviors. Typically offered Summer Fall Spring.

**PSY 27200 - Introduction To Industrial-Organizational Psychology**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Survey of psychological principles and research methods relevant to organizations and industry. Topics covered include research methodology, individual differences, personnel selection, performance measurement, training, motivation, job satisfaction, emotions, work stress, and leadership. Typically offered Fall Spring Summer.

**PSY 30900 - Educational And Psychological Assessment**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C- OR EDPS 22000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Undergraduate Experiential/Research/Seminar. Theoretical foundations and applied experiential research opportunity. Requires presentation to key stakeholders and 45 hours of individual or group experiential research during the semester. Typically offered Spring.

**PSY 31000 - Sensory And Perceptual Processes**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A survey of the study of psychological experiences caused by stimulation to the senses. Topics include theory and research in seeing, hearing, touching, smelling, and tasting as experienced by humans and other animals. Typically offered Summer Fall Spring.

### **PSY 31100 - Human Memory**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A survey of theories and research about how humans remember information and why they often forget. Topics include research on amnesia, forgetting, and sensory memory systems as well as on practical issues such as how to improve memory. Typically offered Fall Spring.

### **PSY 31400 - Introduction To Learning**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course attempts to make clear the theoretical and practical implications of learning principles and findings. Various theories of learning are examined and the implications of these theories, and the learning approach generally, for a variety of practical problems are emphasized. Typically offered Summer Fall Spring.

### **PSY 32200 - Neuroscience Of Motivated Behavior**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Neuroanatomical analyses of behavioral functions. Topics include movement, sexual behavior, maternal behavior, hunger, thirst, emotion, pain; addiction, biological rhythms, memory, evolution of the brain, language, hemispheric specialization, brain damage, brain remodeling during development and aging, correlates of cognitive processing. Typically offered Fall Spring.

### **PSY 32500 - Professional And Ethical Issues In Psychology**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. The study of ethical and professional issues in the field of psychology. Typically offered Fall Spring.

### **PSY 33200 - Forensic Psychology**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. The study of the production and application of psychological knowledge and research findings within the civil and criminal justice systems, including the use of psychological science to resolve legal issues. Typically offered Fall Spring.

### **PSY 33400 - Cross Cultural Psychology**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Examination and restructuring of the major psychological principles from a cultural perspective. A study of the diversity of development of the individual across Asian, African-American, Latino/a, and American Indian/Alaskan Native cultures will be presented. The experience of self, role of the family and community, and the psychology of prejudice will be emphasized. Issues related to the workplace, religion, sexual orientation, ability status, and gender will also be discussed. Typically offered Fall Spring.

### **PSY 33500 - Stereotyping And Prejudice**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course examines the topics of stereotyping, prejudice, and discrimination from a social psychological perspective. Relying on empirical findings and relevant theoretical approaches, the course moves beyond lay opinions to explore the social psychological foundations and forms of stereotyping and prejudice, and to examine various strategies for reducing intergroup biases. Typically offered Fall Spring.

### **PSY 33600 - Issues In Developmental Psychology**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Survey of current issues in developmental psychology and methods for studying these problems. The topics selected for intensive examination reflect contemporary developmental research issues and may involve different-aged children or adults. Typically offered Fall Spring.

### **PSY 33900 - Advanced Social Psychology**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C- OR SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An in-depth survey of selected topics in social psychology such as aggression, attraction, social influence, social attribution, helping behavior, leadership, cooperation, competition, and attitudes and attitude change. (Not open to students with credit in SOC 34000). Typically offered Fall Spring.

### **PSY 34101 - History Of Psychology**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A review of the scientific and theoretical issues that contributed to the development of modern psychology. Emphasis is placed on historical themes that continue to be influential in the science and profession of psychology. Typically offered Fall Spring.

### **PSY 34200 - Introduction To Psychology Of Personality**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course integrates empirical studies (observational, correlational, experimental) with classical and current personality theories. Topics include the biological foundations of personality, self-esteem, extraversion, sex role orientation, authoritarianism, and personality disorders. Minimum competence is assumed in basic experimental design and correlations. Typically offered Fall Spring.

### **PSY 34400 - Human Sexuality**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C- OR SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A nonjudgmental approach to the study of sexuality through attempts to bring to students' awareness their own sexual values. Topics include evaluation of research, BIOLOGICAL aspects, varieties of expression, inadequacies, violence, love, erotica, gender identity, aging, and sex laws. Typically offered Fall Spring Summer.

### **PSY 34900 - Psychology of Women**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An examination of the history and sources of concepts which have defined the psychological functioning of women and a critical evaluation of current evidence regarding women and their behavior, examining the influences which affect them in contemporary society, as set within the context of the life cycle. Typically offered Fall Spring Summer.

### **PSY 35000 - Abnormal Psychology**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Various forms of mental disorders from the standpoint of their origin, treatment, prevention, social significance, and relation to problems of normal human adjustment. Typically offered Fall Spring Summer. CTL:ISH 1023 Abnormal Psychology

### **PSY 35500 - Child Abuse And Neglect**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A historical and conceptual overview of violence against children, from infancy through adolescence, is presented. Definitions and models of violence are evaluated with respect to existing research findings. Assessment techniques, treatment (intervention) approaches and legal issues are examined. The major forms of violence against children to be emphasized include: physical child abuse, sexual child abuse, emotional (psychological) child abuse, child neglect and failure-to-thrive infants. Typically offered Fall Spring Summer.

### **PSY 36000 - Developmental Psychology**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Not open to students with credit in PSY 23500. An examination of behavioral ontogeny: differences and similarities arising out of successive transactions of organism with environment over time. Specification of processes and outcomes from conception through maturity. Typically offered Fall Spring.

### **PSY 36100 - Human Development I: Infancy And Childhood**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A consideration of the formative years in human development with primary attention given to the processes of socialization, individualization, and adaptation, initiated by retrospective self-examination and furthered by an analysis of systematic life history data. Typically offered Fall Spring.

### **PSY 36200 - Human Development II Adolescence**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C- OR EDPS 22000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A behavioristically-oriented analysis of social, personality, and cognitive development in adolescence and youth. Typically offered Fall Spring Summer.

**PSY 36300 - Human Development III: Adulthood**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. An analysis of growth trends in adulthood as arising from the experiences of childhood and adolescence and as manifesting themselves in the performance of a variety of adult roles. The realization of maturity, as seen in self assessment and examination of systematic life history data. The prospects for later adulthood: involvement versus disengagement. Typically offered Fall Spring Summer.

**PSY 36500 - Development of Gender Roles in Children**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Considers basic concepts and the varying theoretical interpretations for the development of gender roles, with special attention given to recent empirical findings with children. Measures used in this area will be demonstrated in class and critically evaluated. Typically offered Fall.

**PSY 36700 - Adult Development And Aging**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Theory and research on adult development from young adulthood through the elderly years. Course covers biological, cognitive, personality, and social issues. Topics include vocational choice, marriage, parenthood, the empty nest, menopause, memory and aging, retirement, widowhood, longevity, and death and dying. Typically offered Fall Spring Summer.

**PSY 37000 - Environmental Psychology**

Credit Hours: 3.00. The psychological influence of immediate environment on human and, to a lesser extent, animal behavior. Environmental factors will be considered from the viewpoints of social psychology, applied experimental psychology, consumer psychology, community psychology, and ethology. Typically offered Fall Spring.

**PSY 37300 - Psychology In Industry**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Survey of applications of psychological principles and research methods to personnel selection, training, and appraisal; societal context of work including study of work motivation, satisfaction and alienation, small group dynamics, and leadership. Not open to students with credit in PSY 570. Typically offered Fall Spring Summer.

**PSY 37400 - Organization And Behavior**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Survey of basic behavioral science research and thought on organizational behavior as evidenced in individual group, intergroup, and societal phenomena. The reciprocal relationship between individual work behavior and institutional factors are stressed and analytically reviewed. Not open to students with credit for PSY 57200.

Typically offered Fall Spring Summer.

**PSY 37500 - Approaches To Counseling And Psychotherapy**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course engages students in the issues, skills and best practices of counseling and psychotherapy. Through various learning activities, students examine the theories involved in the delivery of counseling and psychotherapy. PSY 34200 is recommended as a prerequisite. Typically offered Fall Spring Summer.

**PSY 38000 - Behavior Change Methods**

Credit Hours: 3.00. Application of behavioral learning principles to problems in living. Self-paced learning format covers design and evaluation of behavior modification programs, with practical and ethical issues. Relevant to work with children, adults, clinical patients, athletes, etc., in schools, institutions, and everyday situations. Typically offered Fall Spring.

**PSY 38600 - Consumer Behavior**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Basic concepts and methods of psychology as used to understand consumer behavior. Course covers general concepts (e.g. personality, information-processing, social class, family decision-making) as well as their applications to specific examples of consumer behavior (e.g. information search, product choice, purchase). Typically offered Fall Spring Summer.

**PSY 39000 - Research Experience In Psychology**

Credit Hours: 1.00 to 3.00. Involvement in an ongoing research project in the Department of Psychological Sciences. Permission of instructor required. Typically offered Fall Spring Summer.

### **PSY 39100 - Readings In Psychology**

Credit Hours: 1.00 to 3.00. In-depth reading on a specific topic in psychology under the guidance of a faculty member, often in preparation for PSY 49800. Permission of instructor required. Typically offered Fall Spring Summer.

### **PSY 39200 - Special Topics In Psychology**

Credit Hours: 1.00 to 3.00. Various topics that may change from semester to semester are presented by Psychological Sciences department faculty. Typically offered Fall Spring Summer.

### **PSY 42000 - Introduction To Personality Theory**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Personality theories selected from the traditions of psychoanalysis, behaviorism, and phenomenology-existentialism are presented and contrasted in the fundamental assumptions made by each outlook. Theorists surveyed include Freud, Adler, Jung, Dollard and Miller, Skinner, Bandura, Rogers, Boss, Binswanger, and Kelly. Typically offered Fall Spring Summer.

### **PSY 42800 - Drugs And Behavior**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Discussion of the variety of drugs that affect the nervous system and behavior. Emphasis will be upon a discussion of the physiological and pharmacological bases for the use and misuse of drugs in our society. Typically offered Fall Spring.

### **PSY 43000 - Systems And Theories Of Psychology**

**Prerequisite(s):** PSY 31000 FOR LEVEL UG WITH MIN. GRADE OF C- AND PSY 31400 FOR LEVEL UG WITH MIN. GRADE OF C- OR PSY 32200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. A review of major systems of thought and theories contributing to current developments in psychology. Special emphasis placed on broad approaches to building an understanding of man, both scientific and humanistic including behaviorism, psychoanalysis and humanistic-cognitive approaches. Typically offered Fall Spring Summer.

### **PSY 43300 - Theories in Human Development**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF D- AND BHS 20500 FOR LEVEL UG WITH MIN. GRADE OF D- AND (PSY 36100 FOR LEVEL UG WITH MIN. GRADE OF D- OR CDFS 21000 FOR LEVEL UG WITH MIN. GRADE OF D-) AND BHS 20500 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. A survey of current major issues of developmental psychology and relevant and evolving methodological approaches to these problems. The emphasis is on developmental processes and factors affecting these processes. Not open to students with credit in PSY 34300. Typically offered Fall Spring Summer.

### **PSY 43500 - Introduction to Marriage and Family Therapy**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course provides the student with an introduction of general systems theory with a special emphasis on applications within marriage and family therapy. Course topics include the historical roots of family therapy, descriptions of treatment modalities and clinical interventions used by marriage and family therapists. A variety of therapeutical approaches to marriage and family therapy are explored. Typically offered Fall Spring Summer.

### **PSY 44300 - Aggression And Violence**

Credit Hours: 3.00. An intensive examination of the nature of human aggression. Among the topics covered will be (1) theoretical perspectives concerning such behavior; (2) social conditions that encourage its performance; and (3) means for its prevention and control. Typically offered Fall Spring.

### **PSY 45000 - Crisis Intervention**

**Prerequisite(s):** PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Major life crises in areas such as death, suicide, substance abuse, loneliness, sexuality, marital and family relationships, and situational loss are analyzed by means of crisis theory and crisis intervention approaches. Both individual and societal responses are considered primarily from a nonpathological viewpoint. Typically offered Fall Spring.

### **PSY 48000 - Field Experience In Psychology**

Credit Hours: 3.00. Supervised volunteer field work experiences in a setting appropriate to students' interest and goals. Intended as an opportunity to integrate theory and practice. Typically offered Fall Spring Summer.

### **PSY 48600 - Seminar In Human Development And Disability**

Credit Hours: 3.00. (BHS 48600) The Seminar On Human Development and Disability will expose students multiple perspectives related to the issues in human development and disability related issues. The purpose of the course is to provide an interdisciplinary experience for students preparing for work in the human services specifically with individuals with disability. Students will participate in a seminar originating at the Riley Child Development Center at the Indiana University School of Medicine. Students will participate in seminar presentations provided by pediatricians, psychologists, psychiatrists, social workers, special educators, and occupational therapists. Students will also gain experience in critiquing disability related research in the context of guided class discussions. Typically offered Summer Fall Spring.

### **PSY 49100 - Topics In Psychology**

Credit Hours: 1.00 to 6.00. Topics vary. Typically offered Fall Spring Summer.

### **PSY 49200 - Internship In Psychology**

**Prerequisite(s):** PSY 32500 FOR LEVEL UG WITH MIN. GRADE OF D- AND PSY 37500 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Experiential, supervised training in various areas of psychology-related fields including human factors, human resources, mental health-related organizations, research labs, and supervised living institutions. Usually taken in junior or senior year. Permission of instructor required. Typically offered Fall Spring Summer.

### **PSY 49800 - Senior Research**

**Prerequisite(s):** PSY 20100 FOR LEVEL UG WITH MIN. GRADE OF C- AND PSY 20300 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Student completes an in-depth study of commonly used research designs in psychology, and their associated descriptive and inferential statistical analysis. Statistical analyses are taught conceptually and computationally; the latter by manual means and by computer statistical software. Students also learn the proper interpretation of data, all of which culminates in an APA style written manuscript.

### **PSY 50000 - Statistical Methods Applied To Psychology, Education, And Sociology**

Credit Hours: 3.00. Descriptive statistics and an introduction to sampling statistics. Applied to psychological, sociological, and education data. Pre-college level course work in Algebra and Number Theory. Typically offered Fall Spring Summer.

### **PSY 50500 - Mental Measurement**

Credit Hours: 3.00. Introduction to the general area of mental measurement. Theory and content of measuring device in the fields of intelligence, interests, personality, and special aptitudes. Typically offered Fall Spring Summer.

### **PSY 53200 - Psychological Disorders Of Childhood**

Credit Hours: 3.00. A review of the nature, causes, and consequences of deviations from normal childhood development. Emphasis is placed on the two most common types of psychological problems in childhood: intellectual disability and behavior disorders. Typically offered Fall Spring Summer.

### **PSY 53500 - Psychology Of Death And Dying**

Credit Hours: 3.00. An examination of psychological research and theory related to death and the dying process. Topics include death concepts, attitudes, and fears, psychosocial predictors of death, effects of death on survivors, psychosocial factors related to individual differences and normative dying behaviors, stages of dying, effects of pain and drugs, and managing the dying process. Typically offered Spring.

### **PSY 55000 - Introduction To Clinical Psychology**

Credit Hours: 3.00. The case-study method, including a discussion of the importance of historical information, the contribution of clinical tests to diagnosis, and a general survey of prevention and treatment techniques. Typically offered Summer Fall.

### **PSY 57000 - Industrial Psychology**

Credit Hours: 3.00. This seminar course will introduce students to HR practices associated with bringing new members into organizations. Topics covered include recruitment, procedures for assessing the individual differences of applicants, models used to make selection decisions, and legal considerations associated with personnel selection (e.g., discrimination and affirmative action). The course will focus on theory and empirical research related primarily to the fields of industrial/organizational psychology and management. Typically offered Fall Spring Summer.

### **PSY 57200 - Organization Psychology**

Credit Hours: 3.00. A survey of basic behavioral science research and thinking as these contribute to the understanding of individual, dyadic, group, intergroup, and other large organization behavioral phenomena. The topics covered include motivation, perception, attitudes and morale, communication, leadership, conflict, problem solving, behavior change, and organizational effectiveness. Typically offered Fall Spring Summer.

### **PSY 57700 - Human Factors In Engineering**



Credit Hours: 3.00. (I E 577) Survey of human factors in engineering, with particular reference to human functions in human-machine systems, and consideration of human abilities and limitations in relation to design of equipment and work environments. Primarily for engineers and other nonpsychology majors. Typically offered Fall Spring.

### **PSY 58500 - Psychological Foundations Of Consumer Behavior**

Credit Hours: 3.00. A survey of the concepts and methods of psychology as they apply to the study of consumer behavior. Typically offered Fall Spring Summer.

### **PSY 59000 - Individual Research Problems**

Credit Hours: 1.00 to 3.00. (IUPUI can offer variable credit 1.00-6.00). Opportunity for students to study particular problems in any field of psychology or initiate themselves into research techniques under the guidance of a member of the staff. Typically offered Fall Spring Summer.

### **PSY 60000 - Statistical Inference**

**Prerequisite(s):** PSY 50000 FOR LEVEL GR WITH MIN. GRADE OF B-

Credit Hours: 3.00. Emphasis is given to principles underlying both parametric and nonparametric inference.

**Prerequisite:** PSY 50000. Typically offered Fall Spring.

### **PSY 60500 - Applied Multivariate Analysis**

Credit Hours: 3.00. A survey of the most frequently employed multivariate research techniques, such as multivariate generalizations of univariate tests and analysis of variance, principal components, canonical analysis, and discriminant analysis. A central theme of the course is the general linear model, both univariate and multivariate. A multipurpose program for this model provides the student with practical experience in conducting multivariate research. Some prior exposure to elementary matrix algebra is recommended. Some prior exposure to elementary matrix algebra is recommended. **Prerequisite:** PSY 60000. Typically offered Spring.

### **PSY 67300 - Psychology Of Behavior Disorders**

Credit Hours: 3.00. Advanced abnormal psychology. Consideration will be given to research and theory of psychopathology. Typically offered Spring.

## **Russian**

### **RUSS 10100 - Russian Level I**

Credit Hours: 4.00. A beginning course in standard Russian. Typically offered Fall Spring Summer.

### **RUSS 10200 - Russian Level II**

**Prerequisite(s):** RUSS 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. Continuation of RUSS 10100. Typically offered Fall Spring Summer.

## **Serbo-Croatian**

### **SRCT 10100 - Serbo-Croatian Level I**

Credit Hours: 3.00. Introduction to basic skills in the language. Typically offered Summer Fall Spring.

### **SRCT 10200 - Serbo-Croatian Level II**

**Prerequisite(s):** SRCT 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Continuation of SRCT 101. Typically offered Summer Fall Spring.

## **Service Learning**

### **SERV 10100 - Service Learning/Civic Engagement - Level I**

Credit Hours: 1.00. Experience at the entry level in community service or civic organization(s) that builds student skills and knowledge and requires active engagement and critical reflection. Volunteerism of five hours per week (75 hours per semester) in an off-campus Community Service or Civic site in work related to the student's major and organized around specific learning objectives. Emphasis on collaboration between the student, the University and the Community. Typically offered Summer Fall Spring.

### **SERV 10200 - Service Learning/Civic Engagement - Level II**

Credit Hours: 2.00. Experience at the intermediate level in community service or civic organization(s) that builds student skills and knowledge and requires active engagement and critical reflection. Volunteerism of ten hours per week (150 hours per semester) in an off-campus Community Service or Civic site in work related to the student's major and organized around specific learning objectives. Emphasis on collaboration between the student, the University and the Community. Typically offered Summer Fall Spring.

### **SERV 10300 - Service Learning/Civic Engagement - Level III**

Credit Hours: 3.00. Experience at the advanced level in community service or civic organization(s) that builds student skills and knowledge and requires active engagement and critical reflection. Volunteerism of 15 hours per week (225 hours per semester) in an off-campus Community Service or Civic site in work related to the student's major and organized around specific learning objectives. Emphasis on collaboration between the student, the University and the Community. Typically offered Summer Fall Spring.

## **SERV 20100 - Service Learning/Civic Engagement II**

**Prerequisite(s):** SERV 10100 FOR LEVEL UG WITH MIN. GRADE OF D- OR SERV 10200 FOR LEVEL UG WITH MIN. GRADE OF D- OR SERV 10300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 2.00. Experience at the mid-level in community service or civic organization(s) that builds student skills and knowledge and requires active engagement and critical reflection. Volunteerism of 10 hours per week (150 hours per semester) in off-campus Community Service or Civic site in work related to the student's major and organized around specific learning objectives. Emphasis on collaboration between the student, the University and the Community. Typically offered Summer Fall Spring.

## **SERV 30100 - Service Learning/Civic Engagement III**

**Prerequisite(s):** SERV 20100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Experience at the advanced level in community service or civic organization(s) that builds student skills and knowledge and requires active engagement and critical reflection. Volunteerism of 15 hours per week (225 hours per semester) in off-campus Community Service or Civic site in work related to the student's major and organized around specific learning objectives. Emphasis on collaboration between the student, the University and the Community. Typically offered Summer Fall Spring.

## **SERV 40100 - Service Learning/Civic Engagement IV**

**Prerequisite(s):** SERV 30100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 4.00. Experience at the mastery level in community service or civic organization(s) that builds student skills and knowledge and requires active engagement and critical reflection. Volunteerism of 20 hours per week (300 hours per semester) in off-campus Community Service or Civic site in work related to the student's major and organized around specific learning objectives. Emphasis on collaboration between the student, the University and the Community. Typically offered Summer Fall Spring.

## **Social Work**

### **SWRK 16200 - Careers In Social Work And Human Services**

Credit Hours: 3.00. Careers in Social Work and Human Services is designed to introduce students to social work, psychology and sociology applied to the range of human service fields within the social welfare system. The levels of professional practice, basic themes of helping and serving, professional values, ethics and codes of conduct for human service professionals will be explored. The aim is to expose students to the client types and client problems, organizational auspice and sponsorship and basic approaches utilized in serving individuals, groups, organizations and communities. The course will address cultural diversity and importance of research in human services. Typically offered Fall Spring Summer.

### **SWRK 24000 - Social Work Helping Communication With Individuals And Small Groups**

Credit Hours: 3.00. This course examines the theories of interpersonal communication as applied to helping and human services work from the generalist social work practitioner. The focus is on concepts of verbal and nonverbal communication, communication concepts, skills and abilities necessary for constructive professional interaction. The course develops practical methods and skills in the following: developing rapport, interviewing, group leadership and discussion facilitation. Typically offered Fall Spring Summer.

### **SWRK 26100 - Introduction To Social Work**

Credit Hours: 3.00. Overview of social work profession and practice. Survey of substantive fields of social work and consideration of relevant attitudes, values, and ethics. Prerequisite for entry into social work concentration. Typically offered Fall Spring Summer.

### **SWRK 30100 - Social Work Research**

**Prerequisite(s):** SWRK 26100 FOR LEVEL UG WITH MIN. GRADE OF C+

Credit Hours: 3.00. This course is design to provide students with an understanding of scientific research process, methods and contributions to the advancement of social work practice knowledge. Students will learn the concepts, methods and process of applying research to the actual practice to determine treatment effectiveness. The uses and benefits of research will be examined from the practitioner, supervisor and administrator perspectives. Typically offered Fall Spring Summer.

### **SWRK 32100 - Human Behavior In The Social Environment I**

**Prerequisite(s):** SWRK 26100 FOR LEVEL UG WITH MIN. GRADE OF C+

Credit Hours: 3.00. First course in sequence addressing the basic framework of social work education - person in environment and knowledge of the individual and the family through the life span. Attention to human diversity, discrimination, oppression and social justice as they impact the health and well being of individuals and families. Typically offered Fall Spring Summer.

## **SWRK 32200 - Human Behavior In The Social Environment II**

**Prerequisite(s):** SWRK 32100 FOR LEVEL UG WITH MIN. GRADE OF C+

Credit Hours: 3.00. This course is the second of a sequence. The focus on mezzo (groups, organizations) and macro (community) as the social work client. Attention is given to the impact of human diversity, discrimination, oppression and social justice as they affect groups, organizations and communities. Typically offered Fall Spring Summer.

## **SWRK 35100 - Junior Practicum**

**Prerequisite(s):** SWRK 24000 FOR LEVEL UG WITH MIN. GRADE OF C+ AND SWRK 26100 FOR LEVEL UG WITH MIN. GRADE OF C+

Credit Hours: 3.00. Junior practicum consists of 120 hours of direct service in a faculty approved social work setting. Student is supervised by an agency professional and participates in PNC social work faculty led weekly seminar. Students are exposed to social work professionals in different settings. Each setting provides a participant observer experiences enabling students to begin applying theories and concepts of behavioral sciences and social work to actual practice. Typically offered Fall Spring Summer.

## **SWRK 35900 - Macro Practice: Human Service Organizations And The Community**

**Prerequisite(s):** SWRK 24000 FOR LEVEL UG WITH MIN. GRADE OF C+ AND SWRK 26100 FOR LEVEL UG WITH MIN. GRADE OF C+

Credit Hours: 3.00. The course analyzes theories and concepts used to understand the dynamics between clients, social workers, and managers-supervisors as well as agencies' internal and external environments. The course examines the organizational, management and community interaction effects on individual and group behaviors as well as social work practice consequences. The course considers issues associated with human service organizations, such as diversity. Typically offered Summer Fall Spring.

## **SWRK 36100 - Institutional Social Welfare**

**Prerequisite(s):** SWRK 26100 FOR LEVEL UG WITH MIN. GRADE OF C+

Credit Hours: 3.00. Examination of philosophical, historical, political, economic, and social trends contributing to the development of social welfare. Current policy and practice issues of social work at micro and macro levels. Typically offered Fall Spring Summer.

## **SWRK 36200 - Social Work Practice I**

**Prerequisite(s):** SWRK 16200 FOR LEVEL UG WITH MIN. GRADE OF C+ AND SWRK 26100 FOR LEVEL UG WITH MIN. GRADE OF C+

Credit Hours: 3.00. An upper-level, experientially based course in basic skills needed for facilitating creative problem exploration in helping relationships. Emphasis on interviewing techniques, value clarifications, and examination of one's interpersonal styles. Content directed at professional practice rather than personal growth. Typically offered Fall Spring Summer.

## **SWRK 36300 - Social Work Practice II**

**Prerequisite(s):** SWRK 36200 FOR LEVEL UG WITH MIN. GRADE OF C+

Credit Hours: 3.00. A continuation of SWRK 36200. More intensive work on facilitation, problem exploration. Emphasis placed on action skills, creativity in interpersonal problem solving, and advocacy skills. Content directed at generic skills necessary for generalist social work practice. Typically offered Fall Spring Summer.

## **SWRK 36600 - Group Practice In Social Work**

**Prerequisite(s):** SWRK 24000 FOR LEVEL UG WITH MIN. GRADE OF C+ AND SWRK 26100 FOR LEVEL UG WITH MIN. GRADE OF C+

Credit Hours: 3.00. Group work practice is an elective course introducing the student to group work and providing the opportunity to acquire and use the specialized knowledge and skills particular to working with therapy and task oriented groups. Course content will address Council on Social Work Education core competency criteria for the generalist practice. This course will emphasize the understanding of group dynamics and leadership, planning and initiating the group, specialized methods, and termination and evaluation issues. Typically offered Fall Spring Summer.

## **SWRK 37000 - Social Work With Substance Abuse Clients**

**Prerequisite(s):** SWRK 26100 FOR LEVEL UG WITH MIN. GRADE OF C+

Credit Hours: 3.00. Social work's perspective of substance abusing clients. Topics include pharmacology of substance abuse, criteria for intake, assessment and treatment, diagnostic formats, effects of addiction and recovery on families, and relapse and prevention paradigms. Emphasis on the social work generalist model, the strengths perspective and systems theory. Typically offered Summer Fall Spring.

### **SWRK 37200 - Social Work Practice In Schools**

**Prerequisite(s):** SWRK 26100 FOR LEVEL UG WITH MIN. GRADE OF C+

Credit Hours: 3.00. Use of the Social Work Generalist Model to understand practice principles such as goal setting and service planning with culturally and ethnically diverse populations. Practice modalities to be discussed include group, consultation, family and community-based interventions. Specific assessments and interventions are presented for substance abuse, violence, underachievement, and truancy. Typically offered Summer Fall Spring.

### **SWRK 37300 - Social Work Practice With The Elderly**

**Prerequisite(s):** SWRK 24000 FOR LEVEL UG WITH MIN. GRADE OF C+ AND SWRK 26100 FOR LEVEL UG WITH MIN. GRADE OF C+

Credit Hours: 3.00. Generalist model practice with the elderly population including person-centered planning, empowerment, communication emphasis, interdisciplinary planning, assessment use and instruments application. A substantial base of diversity among the elderly population is a course focus. Typically offered Summer Fall Spring.

### **SWRK 37700 - Child Welfare: Policies And Best Practices**

**Prerequisite(s):** SWRK 24000 FOR LEVEL UG WITH MIN. GRADE OF C+ AND SWRK 26100 FOR LEVEL UG WITH MIN. GRADE OF C+

Credit Hours: 3.00. Introduction to the knowledge and skills required to work with children and their families. Emphasized in the course: understanding child welfare policy development, benefits of child welfare services, child protective services, foster care, adoption, institutionalization, examination of public policies, and social work practices with children. Typically offered Fall Spring Summer.

### **SWRK 38300 - Program Evaluation**

**Prerequisite(s):** SWRK 26100 FOR LEVEL UG WITH MIN. GRADE OF C+

Credit Hours: 3.00. Program evaluation research designs discussed including program monitoring, client satisfaction, needs assessment, formative and evaluative assessments. Emphasis on application of evaluations for social work practice settings. Elements of a substantive social work program are learned. Familiarity and competence reading and using the social work program evaluation literature is included. Typically offered Summer Fall Spring.

### **SWRK 39000 - Directed Study**

Credit Hours: 1.00 to 3.00. Topics vary. Typically offered Summer Fall Spring.

### **SWRK 46100 - Field Practicum In Social Work**

**Prerequisite(s):** SWRK 30100 FOR LEVEL UG WITH MIN. GRADE OF C+ AND SWRK 32200 FOR LEVEL UG WITH MIN. GRADE OF C+ AND SWRK 35100 FOR LEVEL UG WITH MIN. GRADE OF C+ AND SWRK 36300 FOR LEVEL UG WITH MIN. GRADE OF C+

Credit Hours: 6.00. In community human service agency under professional social work field instructor students develop an individualized learning contract that creates an experience applying academic and social work classroom learning to actual professional practice with client(s); 240 hours each for two semesters and intern seminar group with PNC faculty. The theory, tools, skills, methods and roles of generalist social work are practiced under professional supervision in human service agencies with actual clients. Typically offered Fall Spring Summer.

### **SWRK 46400 - Field Practicum In Social Work II**

**Prerequisite(s):** SWRK 46100 FOR LEVEL UG WITH MIN. GRADE OF C+

Credit Hours: 6.00. In a community human service agency, under a professional social work field instructor who provides direction, guidance and supervision, students develop a learning contract that creates an experience applying academic and social work classroom learning to actual professional practice with clients(s). This internship is 240 hours over an entire semester. Imbedded in the course is a weekly intern seminar group meeting with PNC faculty. The theory, tools, skills, methods and roles of generalist social work are practiced under professional supervision in human service agencies with actual clients. Typically offered Fall Spring Summer.

## **Sociology**

### **SOC 10000 - Introductory Sociology**

Credit Hours: 3.00. A survey course designed to introduce the student to the scene of human society. Fundamental concepts, description, and analysis of society, culture, the socialization process, social institutions, and social change. Typically offered Fall Spring Summer.

### **SOC 22000 - Social Problems**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Contemporary problems at the community, society, and international levels, focusing on patterns of social organization and social change in American society, with concentration on such topics as technological

militarism and war, poverty, racism, political protest, and cybernation. Typically offered Fall Spring Summer. CTL:ISH 1061 Social Problems

### **SOC 24500 - Field Of Sociology**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 1.00. Examination of educational and career opportunities in the field of Sociology, major theoretical and research approaches are briefly presented to assist student preparation for subsequent courses and options in Sociology. The application process and experience of post-graduate education are reviewed. Typically offered Summer Fall Spring.

### **SOC 26100 - Basic Helping Skills For Human Services**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An overview of the various human services. This course introduces students to the history of the helping professions, professional values and ethics, and the myriad of settings in which such services are offered. Current frameworks, methods, settings, of these services are included. Not open to students with credit in SWRK 26100. Typically offered Fall Spring Summer.

### **SOC 30100 - Sociology Of International Change**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Analysis of recent international developments from the sociological perspective. Topics include such issues as ethnic conflicts, trade wars, population growth, technological changes, environmental issues, famine, the collapse of the USSR, and the formation of new political/ economic rivalries. Typically offered Fall Spring Summer.

### **SOC 30200 - Group Processes**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course investigates the relationship between the individuals and the groups to which they belong. Classic and contemporary research on group processes will be discussed. Topics will include group formation, evolution, and dissolution; leadership and authority; social influence; decision making; productivity, and relationships among groups. Typically offered Fall Spring Summer.

### **SOC 30300 - Sociology Of Violence**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This class explores sociological explanations of violence in the United States. Topics under study include: personal violence, sexual and intimate violence; prejudice, violence and hate crimes; violent crime; state violence; corporate violence and victimology. Typically offered Fall Spring Summer.

### **SOC 30600 - Methods In Human Services**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The class will focus on case management techniques that will be used in format systems such as welfare programs, health care and mental health agencies, child care programs, agencies serving the elderly and the corrections industry. Emphasis will be placed on multidimensional assessment techniques, information and referral services and the skills necessary to act as a change agent, educator and facilitator. Other essential elements of the course include crisis intervention, the dynamics involved in family systems, health promotion, and the needs of special populations. Typically offered Fall Spring Summer.

### **SOC 30700 - Field Experience In Human Services**

**Prerequisite(s):** SOC 26100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The field experience component of the Human Services curriculum provides a supervised learning experience in a professional practice setting. The participants in the field practicum include the student, faculty and agency supervisor. This will give students the opportunity to integrate carefully selected and approved individualized experiences as they actively engage in professional tasks which complement and reinforce classroom learning. The seminar that accompanies the course will provide opportunities for student peer relationships and for the development of beginning competencies as students learn to use supervision and focus on specific practice areas. The course will place particular emphasis on the needs of each student. Typically offered Fall Spring Summer.

### **SOC 31000 - Racial And Ethnic Diversity**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Examines racial and ethnic pluralism in America: ways groups have entered our society; their social and cultural characteristics; and their relationships with other groups. Groups include the English, Germans, Irish, Jews, Chinese, Japanese, Blacks, Hispanics, and Native Americans. Typically offered Fall.

### **SOC 31400 - Race And Ethnic Relations**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An examination of the social, psychological, political, economic, and cultural factors that influence society's treatment of members of various racial and ethnic groups, and those factors that influence the ways those factors that influence the ways those groups interact with each other. Not open to students with credit in SOC 51400. Typically offered Fall Spring Summer.

### **SOC 31501 - Gender In Society**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The course focuses on the ways in which society influences individual experiences and understandings of gender and the impact this has on larger social institutions, including education, marriage and family, health, and work. This course also considers the intersections of gender, race and ethnicity, and social class. The influence of feminist theory on our understanding of gender is also discussed. Typically offered Fall Spring Summer.

### **SOC 31700 - Sociology Of Sex And Sexualities**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course focuses on sociological understandings of sex and sexualities by identifying existing tensions and paradoxes in how sex and sexualities are socially understood, discusses, experienced, and portrayed. Topics under study may include: distinctions between sexual behaviors and sexual identities; the historical invention of sexual-identify categories; sex work; sexualized violence; and interactions of other social identities (e.g., race/ethnicity, class, age, gender) with sex and sexualities. This course also examines the ways in which U.S. social laws, policies, education, public opinion, media, religion, and technology work to construct, shape, recognize, and regulate the existing diversity of sex and sexualities. Typically offered Fall Spring Summer.

### **SOC 31800 - Sociology Of Sport**

Credit Hours: 3.00. This course provides a sociological understanding of the institution of sports. It particularly investigates the role of politics, the economy, and the media in the creation of sports as an institution. The variables of race class and gender are emphasized, as are the links between sports and basic American values. Typically offered Summer Fall Spring.

### **SOC 32000 - General Social Organization**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The study of selected areas of social organization. Institutions as special forms of organizations and bureaucracies. Theories and empirical studies of power and decision making in organizations. Case studies of American organizations and institutions. Typically offered Fall Spring Summer.

### **SOC 32400 - Criminology**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Nature and cause of crime; methods of dealing with adult and juvenile offenders, consideration of present programs for the social treatment of crime in the light of needed changes. Typically offered Fall Spring Summer.

### **SOC 32500 - Social Forces And Social Movements**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Examines the social, political, economic, and social psychological conditions that give rise to social movements, the ideological perspectives of major social movements, and the inter-relationships between social movement and social change. Typically offered Fall Spring Summer.

### **SOC 32800 - Criminal Justice**

Credit Hours: 3.00. Introduction to institutionalized responses of society to the problem of crime. Analysis of the administration of justice in each of the major components of the criminal justice system and laws regulating their operations. Some consideration given to comparative criminal justice. Typically offered Fall Spring. CTL:ISH 1030 Introduction To Criminal Justice

### **SOC 33000 - Culture, Arts, Society**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The relations of the arts to society; the production, diffusion, institutionalization, democratization of the arts, with attention to the consequences of diverse media structures organization, marketing, and support structures. Emphasis will be placed on related emerging social roles, the connection between art and politics, elite versus mass arts, and the arts and cultural values. Typically offered Fall Spring Summer.

### **SOC 33400 - Urban Sociology**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Development of the city and its functions; types of social behavior in cities; influences of city life on personality; city planning. Typically offered Summer Fall Spring.

### **SOC 33900 - Introduction To The Sociology Of Developing Nations**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Analysis of the causes of development in the Third World. Topics include: the food crisis; population growth; poverty and inequality; industrialization, including the role of multinational corporations; debt; and the International Monetary Fund. Regional differences in patterns and causes analyzed. Typically offered Fall Spring.

### **SOC 34000 - General Social Psychology**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Social influences on the individual and processes of social interaction. Individual attitudes and behavior as related to socialization, social norms, social roles, communication and propaganda, and other social influences. Among the interaction processes considered are interpersonal attraction, influence, leadership, cooperation, and conflict. Not open to students with credit in PSY 24000 or PSY33900. For those students pursuing a BA in Sociology or Psychology, the prerequisites for this course also include SOC38300, SOC38400, or PSY20300. Typically offered Summer Fall Spring.

### **SOC 34100 - Culture And Personality**

Credit Hours: 3.00. A cross-cultural survey stressing differing basic personality types and the processes by which adult personality is acquired. Case studies of selected non-Western cultures will be used to provide comparative perspectives. Typically offered Summer Fall Spring.

### **SOC 35000 - Social Psychology Of Marriage**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Designed to provide an understanding of contemporary courtship, marriage, and family interaction as cultural, social, and social-psychological phenomena. Consideration of the major sources of marital strain and conflict within a heterogeneous, rapidly changing society. Not open to students who have CDFS35000 or WOST35000. Typically offered Summer Fall Spring.

### **SOC 35201 - Drugs Culture And Society**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. (ANTH 35201) The course provides an overview of the social and cultural underpinnings of drug use across societies. Students engage with various topics including addiction, global markets, drug epidemics, public policy, and cross-cultural differences in drug use. Typically Offered Fall Spring Summer.

### **SOC 36100 - The Institution Of Social Welfare**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Basic concepts and activities of social service organizations. Field trips to selected institutions. Not open to students with credit in SWRK 36100. Typically offered Fall.

### **SOC 36400 - Child And Family Welfare**

**Prerequisite(s):** SOC 26100 FOR LEVEL UG WITH MIN. GRADE OF D- AND PSY 36100 FOR LEVEL UG WITH MIN. GRADE OF D- AND PSY 36200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A review of the family as it is influenced by societal and personal forces. The impact of culture, society, and economics on the family is reviewed; additionally, the personal and interpersonal factors including family crises, breakdowns, unemployment, and alcoholism are considered. Not open to students with credit in SWRK 36400. Typically offered Fall Spring Summer.

### **SOC 36500 - Constructing American Families**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course considers changes and variations in the forms and portrayals of family and family life in the U.S. across time. Topics under study may include: how gender, race, and class shape family roles and family labor (care work); processes of courtship, dating, cohabitation, partnership, marriage, parenthood, and divorce; multiracial/multiethnic families; gay and lesbian families; and family violence. This course also examines the ways in which U.S. social laws, policies, economy, public opinion, media, religion, and technology work to construct, shape, recognize, and regulate the diversity of family forms that exist. Typically offered Fall Spring Summer.

### **SOC 36700 - Religion In America**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Examines the social dimensions of religion in American life; religion in American culture; social profiles of America's religious groups, trends in individual religious commitment; and religion's impact on American life. . Typically offered Fall.

### **SOC 37300 - Gender And Interaction**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is an introduction to the social psychology of gender. In this course we will examine how gender shapes our everyday experiences and interactions. The social psychology of gender is inherently an interdisciplinary field and so over the course of the semester we will be drawing on both sociology and psychology to consider the reciprocal relationship between the social environment and individual experiences and understandings of gender. Typically offered Fall Spring Summer.

### **SOC 38200 - Introduction To Statistics In Sociology**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSY 12000 FOR LEVEL UG WITH MIN. GRADE OF D- OR HDFS 21000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Introduction to the basic techniques of statistical analysis applicable to sociological data. Elementary descriptive statistics and statistical inference. Introduction to multivariate analysis. Typically offered Fall Spring.

### **SOC 38300 - Introduction To Research Methods In Sociology**

**Prerequisite(s):** SOC 38200 FOR LEVEL UG WITH MIN. GRADE OF D- OR BHS 20100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Introduction to the methods of data collection and analysis and to the use of the scientific method of social research. Formulation of hypotheses and research designs for their testing. Elementary principles for the conduct of experiments, observation and interviewing, documentation, content analysis, and surveys. Relationship between social research and social theory. Typically offered Fall Spring.

### **SOC 39100 - Selected Topics In Sociology**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 1.00 to 3.00. Various topics in sociology that may change from semester to semester are presented by sociology faculty members. Typically offered Fall Spring.

### **SOC 40200 - Sociological Theory**

**Prerequisite(s):** SOC 38300 FOR LEVEL UG WITH MIN. GRADE OF C OR SOC 38400 FOR LEVEL UG WITH MIN. GRADE OF C AND SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An advanced critical treatment of the theories, concepts, and methods of sociology. A basic course required of undergraduate majors in sociology. Typically offered Fall Spring.

### **SOC 40300 - Sociology Of Developing Countries In Era Of Globalization**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is designed to acquaint students with the conditions in and faced by people in developing countries in Africa, Asia, Latin America and the Middle East. This will be done with an overview of development and how that has affected these countries, and how that is changing in the shift from development to globalization. This course will also examine these countries interactions with the United States. Permission of department required. Typically offered Fall.

### **SOC 40400 - The Environment And Social Justice**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is designed to give students a sociological look at the social interaction between human beings and their physical environment-accordingly, it will not focus on the physical environment alone. Course will provide different theoretical frameworks to understanding society, and will take a global approach to the subject. Course will discuss a number of environmental issues that are especially important in the world, as well as subjects of more immediate concern in Northwest Indiana. Permission of department required. Typically offered Fall Spring Summer.

### **SOC 40500 - Power, Social Control And The Media**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is designed to give students an introductory, macrosociological look at the mass media



in society today. This will examine the mainstream media, as well as the newly emerging media-including the internet-as used both by mainstream and alternative outlets, and examines the impact of media on social existence. Permission of department required. Typically offered Fall Spring Summer.

**SOC 40600 - People's Movements And Social Power**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course will introduce students to the study of social movements, which are a major source of social change in the world today. Will look at a number of social movements from a global perspective. Permission of department required. Typically offered Fall Spring Summer.

**SOC 40700 - Sociology Of Religion**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course will provide students with an opportunity to think about religious experience and religious organizations as a part of a larger social order by providing a sociological overview of the nature and functions of religious beliefs and institutions in modern societies. Topics will include: the nature of religious organizations and the process of secularization; the role of religious organizations in social change and social stratification; the development and influence of religiosity and religious identity in the lives of individuals; and the relationship between religion and science. Typically offered Fall Summer.

**SOC 40800 - Inequality And The Individual Experience**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The course will examine how structural inequalities such as those related to race, class, and gender are created and reproduced and sometimes challenged through social interaction. Students will learn to apply social psychology to combat contemporary social inequalities in diverse settings such as education, family, government, and the workplace. Typically offered Fall Summer.

**SOC 41100 - Social Stratification**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Examination of systems of class and caste, with special attention to the United States; status, occupation, income, and other elements in stratification. Typically offered Spring.

**SOC 41200 - Social Change**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The study of social change in premodern and modern societies. The following topics will be included: theories of social change, current patterns of social change in the developing and industrial worlds, changes in socialization patterns, interpersonal relations, social institutions, the impact of social change, the desirability of growth and development and the dilemmas of modernization. Typically offered Fall Spring Summer.

**SOC 41600 - Industrial Sociology**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Provides an overview of the historical development of industrial organizations from craft production through the factory to multinational corporations. Examines changes in managerial practices and ideologies and workers' reactions. Explores other institutions (including government, schools, mass media) affecting industrial development. Typically offered Fall Spring.

**SOC 42100 - Juvenile Delinquency**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A study of social and psychological factors influencing individual delinquent behavior patterns. Emphasis on preventive and rehabilitative programs and the role of community agencies such as social service agencies, juvenile courts, and youth authorities. Visits to selected organizations and institutions. Typically offered Fall Spring.

**SOC 42600 - Social Deviance And Control**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Sociological and social psychological study of social control and social deviance. Emphasis on theoretical frameworks and empirical research. Consideration also given to specific areas such as substance abuse, suicide, violence, and deviant collective behavior. Typically offered Fall.

**SOC 43000 - Sociology Of Aging**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Examination of the theories of aging, problems confronting older persons, and programs designed to assist the elderly. Consideration of social aspects of aging in the U.S. in the areas of retirement, employment, housing, income, health care, and the family relationships with cross-cultural and a historical comparisons. Typically offered Fall Spring Summer.

### **SOC 43100 - Services For The Aged**

**Prerequisite(s):** SOC 43000 FOR LEVEL UG WITH MIN. GRADE OF D- OR PSY 36300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course describes current and alternative models for providing community and institutional-based services for the aged. Intervention theories and strategies for providing human services are discussed. Students are expected to apply course concepts when developing ideas for an evaluating existing services for older people. Typically offered Fall Spring Summer.

### **SOC 44000 - Sociology Of Health And Illness**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Examination of the social aspects of health beliefs, the definition of disease, and decisions regarding the seeking of medical care. Identification of major changes in patterns and frequencies of health, sickness, disease, and death in the 20th and 21st centuries and factors influencing these patterns. Analysis of characteristics of U.S. medical care systems with particular emphasis on the economics and ethics of health care delivery, the production and distribution of medical personnel, and comparisons with other systems. Typically offered Fall Spring Summer.

### **SOC 44300 - Field Experience In Criminal Justice**

Credit Hours: 3.00. Observation and supervised participation in the criminal justice system. Readings and class meetings to integrate theory and experience. Intended for students who plan to become employed in the criminal justice system upon receiving the bachelor's degree. Typically offered Fall Spring Summer.

### **SOC 45000 - Gender Roles In Modern Society**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course is not open to students with credit in WOST45000. A critical examination of the complementary roles of men and women in many societies with particular attention to sex/gender differences and inequalities in the contemporary United States. Origins, goals and tactics of the recent women's and men's liberation Movements. Sex differences and inequality in the area of sexuality, marriage, family, education, employment, and income. Social factors which maintain and those which may minimize sex and inequality.

### **SOC 45300 - Intimate Violence**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course examines violence between intimates across the life span starting with child abuse and ending with abuse against the elderly. The perspectives used include social learning theory, gender role socialization and sociocultural values. Current research as well as emerging themes about the transmission of violence, learned behavior, and victimization will be used in this class. Assessment techniques are a major part of the class. Typically offered Summer Fall Spring.

### **SOC 46000 - Field Experience In Gerontology**

**Prerequisite(s):** SOC 43000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Supervised volunteer field experience in a gerontological setting. Intended as an opportunity for practical experience in an organization providing services to older adults, where theoretical concepts can be applied with skills and techniques for dealing with older adults can be developed. Typically offered Fall Spring Summer.

### **SOC 49100 - Topics In Sociology**

Credit Hours: 1.00 to 6.00. Topics vary. Typically offered Fall Spring Summer.

### **SOC 49300 - Interdisciplinary Undergraduate Seminar**

Credit Hours: 1.00 to 3.00. An undergraduate seminar devoted to an interdisciplinary examination of social, economic, political, and intellectual movements, using the faculty resources of the participating departments. Subject matter will vary. Each offering of the seminar will be approved by a committee of department heads from the sponsoring departments. Permission of instructor required. Typically offered Fall Spring.

### **SOC 51400 - Racial And Cultural Minorities**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. America's minority groups; immigration; interracial and intercultural conflicts; assimilation. Typically offered Fall Spring.

### **SOC 52500 - Social Movements**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. Origins and developmental stages of revolutionary and reform movements and communitarian societies; relation between social structure and political attitudes; personality needs and affinity for social and political ideologies. Typically offered Spring.

### **SOC 53000 - Political Sociology**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. Analysis of the social and social psychological sources of routine political participation such as voting and interest group activity, and nonroutine political action such as protest movements and revolution; the organization of power at the community, national, and international level; and political ideology. Typically offered Fall.

### **SOC 53100 - Community Organization**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. Analysis of the local community in terms of its institutional structure, relationships among institutions, political and economic power relationships, and the role of voluntary organizations and interest groups. Typically offered Fall.

### **SOC 57000 - Sociology Of Education**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Analysis of the American public school as a social organization. Includes: interrelations among community power structure, social stratification, and the school; the roles of superintendent, principal, and teacher in community and school; the classroom as a social system; student culture; and teaching as a profession. Typically offered Summer Spring.

### **SOC 57400 - The Social Organization Of Healthcare**

Credit Hours: 3.00. Analysis of the determinants and consequences of the social organization of medical care. Considers morbidity and mortality, costs and utilization of medical services, healthcare occupations and institutions, and change in programs and policies. Typically offered Fall Spring.

### **SOC 57800 - Disability And Society**

Credit Hours: 3.00. The course analyzes the phenomenon of disability from a sociological frame of reference. The course focuses on the role of language and social roles, the effect of public policy upon individuals with disability, the portrayal of disability in popular cultures, the role of technology on the lives of individuals with disability and the challenges confronting our society and its treatment of disability. Students will experience the impact of disability on individuals through an array of educational activities. The structure of the course is designed to facilitate direct contact by students with a disability. The course is also designed to enhance students learning through various readings, assignments, and videos. The students should have regular and consistent access to the Internet and should have the basic skills to navigate the Blackboard site for the course, as well as Word processing software. Typically offered Fall Spring Summer.

### **SOC 59000 - Individual Research Problems**

Credit Hours: 1.00 to 3.00. Individual research or reading in an area of sociology under a sociology department staff member. Does not include thesis work. Permission of instructor required. Typically offered Fall Spring Summer.

### **SOC 59100 - Selected Topics In Sociology**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 1.00 to 3.00. Topics vary. Typically offered Fall Spring Summer.

## **Spanish**

### **SPAN 10100 - Spanish Level I**

Credit Hours: 3.00. A beginning Spanish course with emphasis on communicative skills (listening and speaking), literacy skills (reading and writing) and culture. Permission of department required. Typically offered Fall Spring Summer.CTL:IWL 1910 Spanish Level I

### **SPAN 10200 - Spanish Level II**

**Prerequisite(s):** SPAN 10100 FOR LEVEL UG WITH MIN. GRADE OF C- OR SFLP FOR MIN. SCORE OF 150

Credit Hours: 3.00. Continuation of SPAN 10100. Typically offered Fall Spring Summer.CTL:IWL 1911 Spanish Level II

### **SPAN 10300 - Review Of Spanish Levels I And II**

Credit Hours: 3.00. Required beginning course for students with at least two years of high school Spanish who fail to place into SPAN 20100 or higher. Students passing SPAN 10300 also earn 3 additional hours of departmental credit (without grade) for SPAN 10100. Typically offered Summer.

### **SPAN 10600 - Spanish For Business I**

Credit Hours: 3.00. A Spanish for Special Purposes course. Realistic situations and specialized vocabulary that business and finance professionals need to communicate in the course of daily work. Opportunities to apply grammatical structures in a variety of practical contexts. Highlights on Hispanic customs and practices relevant to business professionals in their interactions with Spanish speakers. Typically offered Fall Spring Summer.

### **SPAN 10700 - Spanish For Business II**

**Prerequisite(s):** SPAN 10600 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A Spanish for Special Purposes course. A continuation of SPAN 106. Realistic situations and additional specialized vocabulary that business and finance professionals need to communicate in the course of daily work. Further opportunities to apply grammatical structures in a variety of practical contexts. Highlights on more Hispanic customs and practices relevant to business professionals in their interactions with Spanish speakers. Typically offered Fall Spring Summer.

### **SPAN 11000 - Spanish For Health Care Providers**

Credit Hours: 3.00. A Spanish for Special Purposes course. Basic terminology for health care professionals. Practice in Spanish communication in assessment and intervention settings with patients/families. General medical history and symptoms are covered as well as special individual topics. Practice in language skill development in health history interviews. Typically offered Fall Spring Summer.

### **SPAN 11100 - Spanish For Health Care Providers II**

**Prerequisite(s):** SPAN 11000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A continuation of SPAN 11000. Additional basic terminology for health care professionals. Practice in Spanish communication in assessment and intervention settings with patients/families. Expanded general health history and symptoms are covered as well as special individual topics. More practice in language skill development in health history interviews. Typically offered Fall Spring Summer.

### **SPAN 11200 - Elementary Spanish Conversation**

**Prerequisite(s):** SPAN 10100 FOR LEVEL UG WITH MIN. GRADE OF D AND SPAN 10200 FOR LEVEL UG WITH MIN. GRADE OF D (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 1.00. Development of oral skills for self-expression. Guided practice in conversation to enhance communicative competence. Small group; discussions in Spanish on various topics. Not open to students enrolled in or having credit for SPAN 20100 or above. Typically offered Fall Spring Summer.

### **SPAN 19000 - Special Topics In Spanish**

Credit Hours: 1.00 to 3.00. Special topics related to Spanish and to Spanish-speaking cultures and literatures. Typically offered Summer Fall Spring.

### **SPAN 20100 - Spanish Level III**

**Prerequisite(s):** SPAN 10200 FOR LEVEL UG WITH MIN. GRADE OF C- OR SFLP FOR MIN. SCORE OF 300

Credit Hours: 3.00. An intermediate Spanish course with emphasis on communicative skills (listening and speaking), literacy skills (reading and writing) and culture. Typically offered Fall Spring Summer. CTL:IWL 1912 Spanish Level III

### **SPAN 20200 - Spanish Level IV**

**Prerequisite(s):** SPAN 20100 FOR LEVEL UG WITH MIN. GRADE OF C- OR SFLP FOR MIN. SCORE OF 425

Credit Hours: 3.00. Continuation of SPAN 20100. Typically offered Fall Spring Summer. CTL:IWL 1913 Spanish Level IV

### **SPAN 20600 - Practicum In Spanish**

Credit Hours: 1.00 to 3.00. Directed practice in Spanish settings that offer contact with the Hispanic community. Typically offered Fall Spring Summer.

### **SPAN 21100 - Elementary Spanish Conversation II**

**Prerequisite(s):** SPAN 11200 FOR LEVEL UG WITH MIN. GRADE OF D- AND SPAN 20100 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 1.00. Continuation of SPAN 11200. May be taken concurrently with SPAN 20100. Typically offered Fall Spring Summer.

### **SPAN 21200 - Intermediate Spanish Conversation**

**Prerequisite(s):** SPAN 21100 FOR LEVEL UG WITH MIN. GRADE OF D- AND SPAN 20200 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 1.00. Development of oral skills for self-expression. Guided practice in Spanish conversation to enhance communicative competence. Small group discussions in Spanish on various topics. Typically offered Fall Spring Summer.

### **SPAN 21500 - Spanish Composition**

Credit Hours: 3.00. Spanish Composition. Typically offered Fall Spring Summer.

### **SPAN 23000 - Contemporary Spanish American Literature In Translation**

Credit Hours: 3.00. Reading and discussion of selected masterpieces of 20th century Latin American prose fiction and essays in translation. Emphasis on works written after World War II. Knowledge of Spanish not required. Typically offered Fall Spring Summer.

### **SPAN 23500 - Spanish American Literature In Translation**

Credit Hours: 3.00. Reading and discussion of selected masterpieces of Spanish American literature. The course context will change from semester to semester. Knowledge of Spanish not required. Typically offered Fall Spring Summer.

### **SPAN 24100 - Introduction To The Study Of Hispanic Literature**

**Prerequisite(s):** SPAN 20200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Reading and discussion of selected poetry, prose, and theatre from Spain and Spanish-speaking America; introduction to critical discourse and basic concepts of literary theory. Texts, discussion, and written assignments in Spanish. Typically offered Fall Spring.

### **SPAN 26100 - Spanish Composition**

**Prerequisite(s):** SPAN 20200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The essentials of Spanish grammar as applied in composition. (Not open to students who have credit for SPAN 31300). Typically offered Fall Spring Summer.

### **SPAN 28000 - Second-Year Spanish: Special Topics**

Credit Hours: 3.00. Selected topics on the civilization, culture, and literature of Spain and Spanish America. Lectures and readings primarily in English, but knowledge of Spanish at the first-year level necessary. Typically offered Fall Spring Summer.

### **SPAN 29000 - Special Topics In Spanish**

Credit Hours: 1.00 to 3.00. Special topics related to Spanish and to Spanish-speaking cultures and literatures. Typically offered Summer Fall Spring.

### **SPAN 30100 - Spanish Level V**

**Prerequisite(s):** SPAN 20200 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Continued development of Spanish speaking, listening, reading, and writing abilities, using materials dealing primarily with everyday life and civilization in the Spanish-speaking countries from a variety of sources (e.g., newspapers, magazines, TV, recent literature, etc.). Conducted primarily in Spanish. Typically offered Summer Fall Spring.

### **SPAN 30200 - Spanish Level VI**

**Prerequisite(s):** SPAN 30100 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Further work to develop speaking, listening, reading, and writing abilities in Spanish on the basis of materials dealing with the ideas and events that have shaped the present-day Spanish-speaking countries. Conducted primarily in Spanish. Typically offered Summer Fall Spring.

### **SPAN 30400 - Readings From The Hispanic World**

**Prerequisite(s):** SPAN 20100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course will focus on the development of interpretive skills in Spanish by emphasizing reading, listening strategies, analytical skills and knowledge about the perspectives, practices, and products of the Hispanic world. Typically offered Fall Spring Summer.

### **SPAN 30600 - Spanish Grammar**

**Prerequisite(s):** SPAN 20200 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This course integrates the four basic language skills (reading, writing, listening and speaking) into a review of the major points of Spanish grammar from Span 101 through 202 plus practice of additional grammar points. The objectives of this course are to increase the student's accuracy in the four basic language skills through acquisition of vocabulary, application of grammar rules, and use of coherent structures. Typically offered Summer Fall Spring.

**SPAN 30700 - Commercial Spanish****Prerequisite(s):** SPAN 20200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course will provide students with the fundamentals of effective expression and communication as these apply to Spanish business situations in particular. It will concentrate on commercial vocabulary, reading, writing, and speaking as related to international business. Typically offered Fall Spring Summer.

**SPAN 31300 - Spanish For Spanish Speakers I**

Credit Hours: 3.00. The presentation of the structure and phonology of Spanish in Spanish for those who come from native-speaking backgrounds but who require the formal training. Grammar, composition, and standard Spanish fluency. Not open to students who have had SPAN 26100 or SPAN 36500. Typically offered Fall Spring Summer.

**SPAN 31400 - Spanish For Spanish Speakers II****Prerequisite(s):** SPAN 31300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A continuation of SPAN 31300 with the presentation of levels of Spanish speech, intellectual readings and compositions, grammar problems. Typically offered Fall Spring Summer.

**SPAN 33500 - The Literature Of The Spanish-Speaking Peoples In The United States**

Credit Hours: 3.00. Study of selected poetry, fiction, theatre, and essays written in the United States by Spanish-speaking writers; includes readings in the literature written in Spanish and English as well as bilingual poetry and prose. Conducted in Spanish and English. Typically offered Fall Spring Summer.

**SPAN 34100 - Hispanic Literature I: Poetry And Drama****Prerequisite(s):** SPAN 24100 FOR LEVEL UG WITH MIN. GRADE OF D- OR SPAN 30200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Reading of selected poetic and dramatic texts from Spain and Spanish-speaking America in their historical and cultural contexts. Readings, discussion, and papers in Spanish. Typically offered Fall Spring.

**SPAN 34200 - Hispanic Literature II: Prose****Prerequisite(s):** SPAN 24100 FOR LEVEL UG WITH MIN. GRADE OF D- AND SPAN 30200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Reading of selected novels and short fiction from Spain and Spanish-speaking America in their historical and cultural contexts. Readings, discussion, and papers in Spanish. Typically offered Fall Spring.

**SPAN 36000 - Spanish Conversation**

Credit Hours: 4.00. Spanish Conversation. Typically offered Fall Spring Summer.

**SPAN 36100 - The Structure Of Spanish I: Phonetics And Phonology**

Credit Hours: 3.00. Linguistic analysis of Spanish phonology, phonetics, and dialectology. Selected topics within the areas of Spanish sociolinguistics and language acquisition. Each of these topics will be approached from a contrastive Spanish/English perspective. One session per week devoted to pronunciation improvement. Typically offered Fall Spring.

**SPAN 36200 - The Structure Of Spanish II: Morphology, Lexicology, And Syntax**

Credit Hours: 3.00. Linguistic analysis of Spanish, focusing on morphology, lexicology, and syntax. This course will present the grammatical structure of Spanish dealing with word-level phenomena (derivational and inflectional morphology, the lexicon) and phrase- and sentence-level phenomena (constituents, word order, sentence structure, etc.). Typically offered Fall Spring.

**SPAN 36500 - Spanish Conversation****Prerequisite(s):** SPAN 20200 FOR LEVEL UG WITH MIN. GRADE OF C- (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. Intensive practice in Spanish conversation. Pattern practice, preparation and delivery of dialogues and topical talks. Practice in pronunciation. Typically offered Fall Spring Summer.

**SPAN 37300 - Spanish Translation****Prerequisite(s):** SPAN 26100 FOR LEVEL UG WITH MIN. GRADE OF D- OR SPAN 31300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A introduction to the principles of translation. Practice in translation from Spanish to English and vice versa. Selected, graded materials from simple to moderate difficulty, illustrating a variety of styles. Acquaintance with reference materials concerning Spanish and English and translations. Typically offered Fall Spring Summer.

**SPAN 39000 - Special Topics In Spanish**

Credit Hours: 1.00 to 3.00. Special topics related to Spanish and to Spanish-speaking cultures and literatures. May be repeated provided topics are different. Typically offered Summer Fall Spring.

### **SPAN 40100 - Spanish Level VII**

**Prerequisite(s):** SPAN 30200 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Advanced work on development of Spanish speaking, listening, reading, and writing abilities, focusing on materials dealing primarily with culture and the arts in the Spanish-speaking countries. Conducted primarily in Spanish. Typically offered Fall Spring.

### **SPAN 40200 - Spanish Level VIII**

**Prerequisite(s):** SPAN 40100 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Spanish 40200 is a content based course that includes an overview of Spanish grammar. Students will therefore be required to learn a considerable amount of information about the different aspects of the Hispanic, Peninsular and Latin American culture that will include history, politics, art, gastronomy, music, traditions, and literature, among others. Typically offered Fall Spring.

### **SPAN 40500 - Introduction To Spanish Literature I**

Credit Hours: 3.00. Introduction to the periods of Spanish literature from the beginning through the 18th century. Reading and discussion of representative works. The rudiments of literary criticism. Typically offered Fall Spring Summer.

### **SPAN 40600 - Introduction To Spanish Literature II**

Credit Hours: 3.00. Introduction to the periods of Spanish literature from the 18th century to the present. Reading and discussion of representative works. The rudiments of literary criticism. Typically offered Fall Spring Summer.

### **SPAN 40800 - Language Practicum In Business**

**Prerequisite(s):** SPAN 26100 FOR LEVEL UG WITH MIN. GRADE OF B- AND SPAN 30700 FOR LEVEL UG WITH MIN. GRADE OF B- AND SPAN 36500 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. The course will consist of actual on-the-job experience in international corporations, industry, commerce, government, or health and social agencies where Spanish is used. The course is designed to expose students to their chosen vocational field. Permission of Department required. Typically offered Fall Spring Summer.

### **SPAN 41300 - Culture Of Spanish -Speaking Americans**

Credit Hours: 3.00. An introduction to the cultural heritage and customs of groups of Spanish-speaking Americans, such as Mexican-Americans, Puerto-Rican Americans, Cuban Americans. The nature of the social processes, points of interference between cultures. Historical and geographical perspectives of Spanish-speaking Americans. Typically offered Fall Spring Summer.

### **SPAN 41400 - Literature Of Spanish Speaking Americans**

Credit Hours: 3.00. The study of the literature of Chicano and Puerto Rican authors. Poetry, plays, short stories and novels presented in survey form so as to cover fairly themes from each Spanish-speaking population segment in contemporary American life. Intermediate knowledge of Spanish is needed because of dialecticism in many of the contemporary works. Typically offered Fall Spring Summer.

### **SPAN 42400 - Business Spanish**

**Prerequisite(s):** SPAN 30200 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. A study of the terminology and techniques used in commercial transactions, including the interpretation and writing of business materials. Development of the four language skills, with emphasis on writing and speaking. Typically offered Fall Spring Summer.

### **SPAN 42600 - Spanish Linguistics**

Credit Hours: 3.00. This course will serve as an introductory course to Spanish linguistics. Typically offered Fall Spring Summer.

### **SPAN 43500 - Spanish American Literature To Modernism**

**Prerequisite(s):** SPAN 20200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The study of the development of Spanish American literature from the early chronicles to the end of the 19th century with consideration of the pre-Hispanic background. Typically offered Fall Spring Summer.

### **SPAN 43600 - Spanish American Literature From Modernism To Present**

**Prerequisite(s):** SPAN 20200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A continuation of SPAN 43500. The study of the development of Spanish American literature beginning with the Modernist period to the present. Typically offered Fall Spring Summer.

### **SPAN 45100 - Spanish Civilization**

Credit Hours: 3.00. The study of modern Spanish life with regard to the social institutions and customs. Lectures in the language. Typically offered Fall Spring Summer.

**SPAN 46100 - Intermediate Spanish Composition**

**Prerequisite(s):** SPAN 26100 FOR LEVEL UG WITH MIN. GRADE OF D- OR SPAN 31300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A continuation of SPAN 26100. In this course, stress is given to the development of more complex grammar and its application in the written language. Emphasis is placed on the structure of composition and basic refinement and precision brought about by grammar and vocabulary. Typically offered Fall Spring Summer.

**SPAN 46500 - Intermediate Spanish Conversation**

**Prerequisite(s):** SPAN 36500 FOR LEVEL UG WITH MIN. GRADE OF D- OR SPAN 31300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Continued practice in Spanish conversation and the study of phonetics for accuracy in pronunciation and intonation. students are encouraged to study contemporary culture as a basis for their conversations. Typically offered Fall Spring Summer.

**SPAN 47300 - Intermediate Spanish Translation**

**Prerequisite(s):** SPAN 37300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The continuation of SPAN 37300 to include more extensive and more difficult translations. Also, a presentation of theoretical concepts concerning translation, and an orientation to research materials for translation purposes. Typically offered Fall Spring Summer.

**SPAN 48000 - Spanish Civilization**

**Prerequisite(s):** SPAN 30200 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. The study of modern Spanish life, with special emphasis on social institutions and customs. Lectures in Spanish. Typically offered Fall Spring Summer.

**SPAN 48100 - Spanish Culture**

**Prerequisite(s):** SPAN 20200 FOR LEVEL UG WITH MIN. GRADE OF D- OR SPAN 31300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. The development of the cultural life of the Spanish people as reflected in the geography, history, music, art, and architecture of Spain. Lectures in Spanish. Typically offered Fall Spring Summer.

**SPAN 48200 - Latin American Civilization**

**Prerequisite(s):** SPAN 20200 FOR LEVEL UG WITH MIN. GRADE OF D- OR SPAN 31300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Outline of Latin American history; the cultural heritage from Spain and from the pre-Spanish civilizations; the intellectual, social, and cultural progress of the Latin American countries. Lectures in Spanish. Typically offered Fall Spring Summer.

**SPAN 49000 - Topics In Spanish**

**Prerequisite(s):** SPAN 20200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Topics vary. Typically offered Fall Spring Summer.

**SPAN 49800 - Advanced Topics In Spanish**

**Prerequisite(s):** SPAN 24100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Advanced studies of particular aspects of Spanish (e.g. culture, civilization, literature, linguistics, film, etc) by examining a varied selection of works. Readings, discussion, and papers in Spanish. Typically offered Summer Fall Spring.

**SPAN 51100 - Advanced Spanish Conversation**

**Prerequisite(s):** SPAN 46500 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. Additional practice in speaking and understanding Spanish. Extensive listening (outside of class) to recordings of natives from various parts of the Spanish-speaking world. Talks based on this material given in class. Graduate students other than M.A.T. candidates may not include this course in the plan of study. Typically offered Spring Fall Summer.

**SPAN 51500 - Advanced Spanish Composition**

**Prerequisite(s):** SPAN 26100 FOR LEVEL UG WITH MIN. GRADE OF B-



Credit Hours: 3.00. Additional training in writing and speaking Spanish; introduction to the study of style. Recommended for prospective teachers. Graduate students other than MA T. candidates may not include this course in the plan of study. Typically offered Spring Fall Summer.

### **SPAN 54100 - Spanish Literature Of The Golden Age**

**Prerequisite(s):** SPAN 40500 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. A survey of Spanish literature from 1500 to 1681. Reading and discussion of representative prose, dramatic and poetic works. Lectures and supplemental readings on literary criticism and on various aspects of the period useful to an understanding of the literature it produced. Typically offered Spring.

### **SPAN 55200 - Spanish American Literature From 1900 To 1970**

**Prerequisite(s):** SPAN 43600 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. A survey of Spanish American literature from 1900 to 1970. Readings and discussion of a number of representative works, as well as excerpts from several others. Typically offered Fall Spring.

### **SPAN 55300 - Spanish American Literature From 1970- Present**

**Prerequisite(s):** SPAN 43600 FOR LEVEL UG WITH MIN. GRADE OF B-

Credit Hours: 3.00. A survey of Spanish American literature from 1970 to the present. Readings and discussion of a number of representative works, as well as excerpts from several others. Typically offered Fall Spring.

### **SPAN 55700 - Argentine Literature**

**Prerequisite(s):** SPAN 34100 FOR LEVEL UG WITH MIN. GRADE OF D AND SPAN 34200 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. A survey of Argentine literature. Reading and discussion of a number of representative works as well as excerpts from several others and from standard anthologies. Typically offered Fall.

### **SPAN 59000 - Directed Reading In Spanish**

Credit Hours: 1.00 to 4.00. Directed readings in Spanish. Permission of instructor required. Typically offered Spring Fall Summer.

## **Statistics**

### **STAT 11300 - Statistics And Society**

Credit Hours: 3.00. Introduction to statistical ideas and their impact on public policy and the sciences. Sample surveys, design of experiments, measurement, analysis of data, simulating probabilities, concepts of inference. Application to current issues and controversies. Not available for credit toward graduation in the School of Science. Typically offered Summer Fall Spring.

### **STAT 13000 - Statistics And Contemporary Life**

Credit Hours: 3.00. Introduction to statistical ideas and their impact on various aspects of modern life. Topics will include the organization, manipulation, and understanding of numerical data, the art of data presentation, interpretation of statistical information as presented in the media, the concept of randomness in gambling and lotteries, and some discussion of statistical fallacies. Typically offered Fall Spring Summer.

### **STAT 21300 - Problem And Decision Theory**

**Prerequisite(s):** MA 15200 FOR LEVEL UG WITH MIN. GRADE OF D- OR MA 15300 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Basic set theory, elementary probability theory, discrete probability models, finite Markov chains. Applications to problems in the management and social sciences. Typically offered Fall Spring.

### **STAT 22500 - Introduction To Probability Models**

**Prerequisite(s):** MA 22400 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. An introduction to basic probability. Emphasis is placed on formulation of models and applications. Probability calculus, standard distributions, random variables, and moments. Credit cannot be given for more than one of STAT 22500, 31100, or 41600. Typically offered Summer Fall Spring.

### **STAT 30100 - Elementary Statistical Methods**

**Prerequisite(s):** MA 14700 FOR LEVEL UG WITH MIN. GRADE OF C OR MA 15200 FOR LEVEL UG WITH MIN. GRADE OF C OR MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C OR MA 21300 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A basic introductory statistics course with applications in various fields and emphasis placed on assumptions, applicability, and interpretation of various statistical techniques. Subject matter includes frequency

distributions, descriptive statistics, elementary probability, normal distribution applications, sampling distribution, estimation, hypothesis testing, linear regression. Typically offered Summer Fall Spring

### **STAT 30200 - Elementary Statistical Methods II**

**Prerequisite(s):** STAT 30100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. Continuation of STAT 30100 Multiple regression and analysis of variance, with emphasis on statistical inference and applications to various fields. Typically offered Fall Spring Summer.

### **STAT 31000 - Health Care Statistics**

Credit Hours: 3.00. Designed for nursing and health studies students. This introductory statistics course focuses on quantitative research design, methods and analyses used in health-care research. The students will be introduced to basic techniques of data organization and will be familiar with the common statistical analysis techniques encountered in nursing research literature. Topics include: healthcare statistical terminology, descriptive statistics, probability, correlation, regression, hypothesis testing and model building. Selected nonparametric techniques will be discussed. Typically offered Fall Spring Summer.

### **STAT 31100 - Introductory Probability**

**Prerequisite(s):** MA 16200 FOR LEVEL UG WITH MIN. GRADE OF C OR MA 16900 FOR LEVEL UG WITH MIN. GRADE OF C OR MA 22400 FOR LEVEL UG WITH MIN. GRADE OF B

Credit Hours: 3.00. Formulation of probability problems, discrete and continuous random variables, expectation, standard distributions, applications to statistical problems, and problems in the physical sciences. Credit cannot be given for more than one of STAT 22500, 31100, or 41600. Prerequisite: two semesters of college calculus. Typically offered Spring.

### **STAT 33001 - Biostatistics**

Credit Hours: 3.00. This course covers the fundamental concepts of statistical methods and their application to biology. The following topics will be included: experimental and sampling designs; descriptive statistics; basic probability or probability distribution; test of hypothesis; one-way analysis of variance; linear regression. Emphasis will be placed on the collection, organization, analysis and interpretation of data from biological experiments and observations. Typically offered Fall Spring Summer.

### **STAT 34500 - Statistics**

**Prerequisite(s):** MA 16400 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Topics from exploratory data analysis and inferential statistics will be covered, along with a necessary introduction to probability. Statistical and probabilistic simulations will be used to enhance students' understanding of randomness and variation. Extensive use of a statistical computer package will be required. Typically offered Fall Spring Summer.

### **STAT 35000 - Introduction To Statistics**

**Prerequisite(s):** STAT 31100 FOR LEVEL UG WITH MIN. GRADE OF C

Credit Hours: 3.00. A data-oriented introduction to the fundamental concepts and methods of applied statistics. Exploratory analysis of data. Sample design and experimental design. Probability distributions and simulation. Sampling distributions. The reasoning of statistical inference. Confidence intervals and tests for one and two samples. Inference for contingency tables, regression, and correlation. Introduction to regression with several explanatory variables. Essential use is made of statistical software throughout. Intended primarily for students majoring in the mathematical sciences. For statistics majors and minors, credit should be allowed in no more than one of STAT 30100, 35000, 50100, and in no more than one of STAT 50300 and STAT 51100. Prerequisite: two semesters of college calculus. Typically offered Fall Spring.

### **STAT 36100 - Applied Regression Analysis**

**Prerequisite(s):** (STAT 22500 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) OR STAT 31100 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) ) AND STAT 30100 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) AND STAT 35000 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) AND STAT 50300 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) AND (PSY 20100 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) OR PSY 20300 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) )

Credit Hours: 3.00. Simple linear regression, multiple linear regression, nonlinear regression, generalized linear models and correlation analysis are covered. Statistical computer programs are used. Typically offered Fall Spring.

### **STAT 36200 - Experimental Designs**

**Prerequisite(s):** STAT 36100 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Single-factor analysis of variance (ANOVA), multifactor ANOVA, randomized block designs, nested designs, repeated measures, latin square and response surface methodology are covered. Statistical computer programs are used. Typically offered Fall Spring.

### **STAT 36300 - Sampling Techniques**

**Prerequisite(s):** (STAT 22500 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) OR STAT 31100 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) ) AND STAT 30100 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) AND STAT 35000 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) AND STAT 50300 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) AND (PSY 20100 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) OR PSY 20300 FOR LEVEL UG WITH MIN. GRADE OF D- (MAY BE TAKEN CONCURRENTLY) )

Credit Hours: 3.00. Simple probability samples, ratio and regression estimation, stratified sampling, cluster sampling with equal probabilities, sampling with unequal probabilities, complex surveys, dealing with non-response. This course teaches statistical ideas that are useful in understanding and designing research in most areas of study, particularly for students in business, the social or behavioral sciences, communication and education. Statistical computer programs are used. Typically offered Fall Spring.

### **STAT 40001 - Statistical Computing**

**Prerequisite(s):** STAT 30100 FOR LEVEL UG WITH MIN. GRADE OF C- OR STAT 34500 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. The purpose of this course is to teach fundamental computing skills required by practicing statisticians. Students will use statistical software for analysis and model building of real world data. Topics include descriptive statistics, inferential statistics, model building, designing and performing simulation experiments, writing codes to perform common statistical tasks. Typically offered Fall Spring Summer.

### **STAT 43000 - Applied Statistics**

**Prerequisite(s):** MA 26500 FOR LEVEL UG WITH MIN. GRADE OF C- AND STAT 40001 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. This class focuses on how mathematical reasoning and statistical methods are used to analyze qualitative and quantitative data. Topics include estimation and hypothesis testing, linear and nonlinear models, generalized linear models, analysis of categorical data, elements of survival analysis and nonparametric statistical methods. Typically offered Fall Spring Summer.

### **STAT 46500 - Case Studies In Statistical Methods**

**Prerequisite(s):** STAT 36100 FOR LEVEL UG WITH MIN. GRADE OF D (MAY BE TAKEN CONCURRENTLY) AND STAT 36200 FOR LEVEL UG WITH MIN. GRADE OF D (MAY BE TAKEN CONCURRENTLY)

Credit Hours: 3.00. A variety of different statistical methods are applied to data sets in a number of different fields. Statistical methods covered include applied regression analysis, experimental design, sampling, time series, categorical data analysis and applied multivariate analysis. This course provides a summary of how statistical ideas are useful in understanding and designing research in many areas of study. Each student investigates and reports on six case study projects. Statistical computer programs are used. Typically offered Fall Spring.

### **STAT 49000 - Topics In Statistics For Undergraduates**

Credit Hours: 1.00 to 5.00. Supervised reading course or special topics course at the senior level for undergraduates are given under this number. Permission of instructor required. Typically offered Fall Spring Summer.

### **STAT 50100 - Experimental Statistics I**

**Prerequisite(s):** MA 15300 FOR LEVEL UG WITH MIN. GRADE OF C- OR MA 15900 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Concepts and methods of applied statistics. Exploratory analysis of data. Sample design and experimental design. Normal distributions. Sampling distributions. Confidence intervals and tests of hypotheses for one and two samples. Inference for contingency tables, regression and correlation, and one-way analysis of variance. Use of the SAS statistical software. Intended primarily for students who have not had calculus. Not open to students in mathematical sciences or engineering. For statistics majors and minors, credit should be allowed in no more than one of STAT 30100, STAT 35000, STAT 50100, and in no more than one of STAT 50300 and STAT 51100. Prerequisite: College Algebra. Typically offered Fall Spring Summer.

### **STAT 50200 - Experimental Statistics II**

**Prerequisite(s):** STAT 50100 FOR LEVEL GR WITH MIN. GRADE OF C-

Credit Hours: 3.00. Regression with several explanatory variables. Regression diagnostics. Analysis of variance for factorial designs. Multiple comparisons. Analysis of covariance. Repeated measures designs. Extensive use of the SAS statistical software. Intended primarily for students who have not had calculus. Not open to students in mathematical sciences or engineering. Typically offered Summer Spring.

### **STAT 50300 - Statistical Methods For Biology**

**Prerequisite(s):** MA 22300 FOR LEVEL UG WITH MIN. GRADE OF D

Credit Hours: 3.00. Introductory statistical methods, with emphasis on applications in biology. Topics include descriptive statistics, binomial and normal distributions, confidence interval estimation, hypothesis testing, analysis of variance, introduction to nonparametric testing, linear regression and correlation, goodness-of-fit tests, and contingency tables. Open only to majors related to the life sciences. For statistics majors and minors, credit should be allowed in no more than one of STAT 30100, STAT 35000, STAT 50100, and in no more than one of STAT 50300 and STAT 51100. Typically offered Fall Spring Summer.

### **STAT 51100 - Statistical Methods**

**Prerequisite(s):** MA 26100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression. For statistics majors and minors, credit should be allowed in no more than one of STAT 30100, STAT 35000, STAT 50100, and in no more than one of STAT 50300 and STAT 51100. Prerequisite: Two semesters of college calculus. Typically offered Fall Spring.

### **STAT 51200 - Applied Regression Analysis**

**Prerequisite(s):** STAT 51100 FOR LEVEL GR WITH MIN. GRADE OF C- OR STAT 51700 FOR LEVEL GR WITH MIN. GRADE OF C-

Credit Hours: 3.00. Inference in simple and multiple linear regression, residual analysis, transformations, polynomial regression, model building with real data, nonlinear regression. One-way and two-way analysis of variance, multiple comparisons, fixed and random factors, analysis of covariance. Use of existing statistical computer programs. Prerequisite: Coursework in Statistical Methods with a calculus prerequisite. Typically offered Fall Spring Summer.

### **STAT 51300 - Statistical Quality Control**

**Prerequisite(s):** STAT 51600 FOR LEVEL GR WITH MIN. GRADE OF C- OR STAT 51100 FOR LEVEL GR WITH MIN. GRADE OF C-

Credit Hours: 3.00. A strong background in control charts including adaptations, acceptance sampling for attributes and variables data, standard acceptance plans, sequential analysis, statistics of combinations, moments and probability distributions, applications. Offered in alternate years. Typically offered Fall Spring.

### **STAT 51500 - Statistical Consulting Problem**

Credit Hours: 1.00 to 3.00. A written report of a consultation problem involving a designed experiment or sampling plan in which the student participates with members of the Department of Statistics staff. Permission of instructor required. Typically offered Fall Spring Summer.

### **STAT 51900 - Introduction To Probability**

Credit Hours: 3.00. (MA 51900) Algebra of sets, sample spaces, combinatorial problems, independence, random variables, distribution functions, moment generating functions, special continuous and discrete distributions, distribution of a function of a random variable, limit theorems. Typically offered Fall Spring.

### **STAT 59700 - Statistical Consulting Seminar**

Credit Hours: 1.00. Active participation in weekly consulting meetings, directed reading in the statistical literature, application of statistical methods to real problems, report writing. Permission of Instructor required. Typically offered Fall Spring Summer.

### **STAT 59800 - Topics In Statistical Methods**

Credit Hours: 0.00 to 6.00 (West Lafayette, IUPUI) 1.00 to 3.00 (North Central) Directed study and reports for students who wish to undertake individual reading and study on approved topics. Permission of instructor required. Typically offered Fall Spring Summer.

## **Swahili**

### **SWAH 10100 - Swahili Level I**

Credit Hours: 3.00. Introduction to Swahili. Typically offered Fall Spring Summer.

### **SWAH 10200 - Swahili Level II**

Credit Hours: 3.00. Continuation of Swahili 101. Typically offered Fall Spring Summer.

## Technology

### **TECH 50100 - Internship In Technology**

Credit Hours: 0.00 to 3.00. Practical work experience in technology-related positions in business, government, and industrial organizations, designed to combine graduate study with work experience directly related to the student's plan of study. Permission of department required. Typically offered Fall Spring Summer.

### **TECH 50200 - Smart Energy Grid**

Credit Hours: 3.00. Design, operation and management of smart energy grid. Study of operating principles and models of smart grid components, including distributed energy sources and distribution feeder components, communication infrastructures for smart grid operation, advanced metering infrastructure, advanced control methods and demand and response management. Other topics include the distribution feeder analysis, impact of smart grid component integration on grid operation and the evaluation of grid reliability. Prerequisite: Graduate student status in the College of Technology or in another school (with appropriate objectives and preparation) and leveling courses may be required based on the student's undergraduate degree. Typically offered Fall Spring Summer.

### **TECH 57800 - Energy Resource Management**

Credit Hours: 3.00. This course will concentrate on four major components of Energy Resource Management: Supply, Demand, Regulation and Environment. Energy audits, energy economics, metering, performance contracting and financing with demand response, measurement, verification, equipment applications, and systems will be studied. An overview of alternative energy as well as the latest energy efficient lighting technology will be given. The quantitative analysis of water, air gas electricity and steam (WAGES) will be given. This course presents the key concepts and methods of energy efficiency. It explores how energy is converted into useful services and the role of increased efficiency in providing those services with less energy. The different forms of efficiency improvements and conservation are introduced, drawing upon examples in transportation, buildings, and industry. Case studies of energy auditing, energy purchasing and conservation, maintenance and operation issues, code and standards applied in energy resource management will be given. Graduate student status or senior status with instructor approval. Leveling courses may be required based on the student undergraduate degree. Typically offered Fall Spring Summer.

### **TECH 57900 - Sustainability Engineering**

Credit Hours: 3.00. The course will introduce the student to Sustainability Engineering and technologies that are used in the managing of organizational operations. Permission of instructor required. Prerequisite: Graduate student status or Senior status with instructor approval. Typically offered Fall Spring.

### **TECH 58100 - Workshop In Technology**

Credit Hours: 0.00 to 8.00. Advanced study of technical and professional topics. Emphasis is on new developments relating to technical, operational, and training aspects of industry and technology education. Typically offered Fall Spring Summer.

### **TECH 59800 - Directed MS Project**

Credit Hours: 1.00 to 3.00. A formal investigation of a particular problem under the guidance of the advisory committee. Enrollment during at least two consecutive terms for a total of three credits is required. Permission of instructor required. Typically offered Fall Spring Summer.

### **TECH 64600 - Analysis Of Research In Industry And Technology**

Credit Hours: 3.00. Analysis of research and evaluation of research reports. Emphasis on understanding the application of fundamental statistical methods in design and interpretation of research findings in industrial, technical, and human resource development environments. Prerequisite: Master's student standing. Typically offered Fall Spring Summer.

### **TECH 69500 - Graduate Professional Practice**

Credit Hours: 0.00. Advanced professional experience in Technology. The experience is coordinated by the major professor with cooperation of a participating employer. Students submit a summary report. Permission of instructor required. Typically offered Fall Spring Summer.

## Theatre

### **THTR 13300 - Survey Of Acting**

Credit Hours: 3.00. This is an introductory acting course for non-theatre majors. It is an exploration of the fundamentals of stage acting designed to enhance communication, creativity and collaboration. Class work includes acting exercises, theatre games and scene work. Typically offered Fall Spring.

### **THTR 13600 - Rehearsal And Performance I**

Credit Hours: 1.00 or 2.00. Study and practice of rehearsal techniques of stage performance. Students will be assigned to acting or other rehearsal activities during semester's major production. May not be taken concurrently with THTR 16800, 33600, or 36800. Typically offered Fall Spring Summer.

### **THTR 13800 - Acting I**

Credit Hours: 3.00. Student experientially learns basic acting skills through a structured series of exercises. Emphasis is on developing and controlling concentration, creation of basic realities, improvisation. May not be taken concurrently with THTR 16800, 33600, or 36800. Typically offered Fall Spring.

**THTR 16800 - Theatre Production I**

Credit Hours: 1.00 or 2.00. Study and application of aspects of theatre production. Practice in various production skills. Students will be assigned to positions in semester's major production. May not be taken concurrently with THTR 13600, 33600, or 36800. Typically offered Fall Spring.

**THTR 20100 - Theatre Appreciation**

Credit Hours: 3.00. Understanding and appreciation of the theatre's role in the modern world, theatre's past contributions and history (overview), dramatic structure and analysis through required viewing and reading, and the contributions of the actor, director, designer, and critic. Typically offered Summer Fall Spring. CTL:IFA 1302 Theatre Appreciation

**THTR 23800 - Acting II**

Credit Hours: 3.00. Introduction to the Stanislavski Method through scene work. The student will present four to eight scenes of increasing complexity, beginning with modern, realistic drama. Textual analysis, advanced game work and improvisation. Typically offered Fall Spring.

**THTR 29000 - Special Topics In Theatre**

Credit Hours: 1.00 to 3.00. Topics will vary. Typically offered Fall Spring.

**THTR 30800 - The History And Development Of The American Musical Theatre**

Credit Hours: 3.00. A study of various musical genres that contributed to the development of the American musical theatre. Typically offered Fall Spring Summer.

**THTR 33600 - Rehearsal And Performance II**

Credit Hours: 1.00 or 2.00. Maximum number of credits for any combination of THTR13600, 16800, 33600, and 36800 is eight. Study and practice of rehearsal techniques and stage performance. All students will audition for the current production. If cast, credit will be earned primarily through participation as an actor/actress. If not cast, credit will be earned through various technical or managerial tasks related to production. Leadership positions will be assigned. Typically offered Fall Spring.

**THTR 34700 - Dramatic Performance**

Credit Hours: 2.00. Students who take THTR 34700 will be significant participants in a full-scale dramatic production at Purdue North Central, either as actors or as members of the production crew. Typically offered Fall Spring Summer.

**THTR 34800 - Dramatic Performance In Context**

Credit Hours: 3.00. Students who take THTR 34800 will be significant participants in a full-scale dramatic production at Purdue North Central, either as actors or as members of the production crew. In addition to their responsibilities in the production, students will attend a weekly class on the literary and cultural content of the play in question, along with instruction in acting. Typically offered Fall Spring Summer.

**THTR 35500 - American Musical Theatre**

Credit Hours: 3.00. (MUS 35500) A study of the origin, artistry, and unique qualities of the American musical theatre. Typically offered Fall Spring Summer.

**THTR 36800 - Theatre Production II**

Credit Hours: 1.00 or 2.00. Maximum number of credits for any combination of THTR13600, 16800, 33600 and 36800 is eight. The study and application of theatre practices. All students will audition for the current production. If cast, credit will be earned primarily through participation as an actor/actress. If not cast, credit will be earned through various technical or managerial tasks related to production. Leadership positions will be assigned. Typically offered Fall Spring.

**THTR 39000 - Directed Study Of Special Theatre Problems**

Credit Hours: 1.00 to 3.00. An undergraduate level, individualized, and intensive study of any aspect of theatre required by the student's plan of study. Permission of instructor required. Typically offered Fall Spring Summer.

**THTR 49000 - Special Topics In Theatre**

Credit Hours: 1.00 to 3.00. Topics will vary. Typically offered Summer Fall Spring.

**THTR 59000 - Directed Study Of Special Theatre Problems**

Credit Hours: 1.00 to 3.00. An individualized and intensive study of any aspect of theatre required by the student's plan of study. Permission of instructor required. Typically offered Fall Spring Summer.

**Urdu****URDU 10100 - Urdu Level I**

Credit Hours: 3.00. Introduction to basic skills in the language. Typically offered Summer Fall Spring.

**URDU 10200 - Urdu Level II**

**Prerequisite(s):** URDU 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Continuation of URDU 10100. Typically offered Summer Fall Spring.

**Vet Medicine**

## **VM 10200 - Careers In Veterinary Medicine**

Credit Hours: 1.00. Overview of the field of veterinary medicine presently and as anticipated for the future. Presentations will include descriptions and discussions of the nature of the professional activity, organization of veterinary medicine, career opportunities, issues confronting the profession, and the admission requirements of the profession. Typically offered Spring.

## **Women's Studies**

### **WOST 12100 - Introduction To Women's Studies**

Credit Hours: 3.00. An introduction to a women's studies perspective in various academic disciplines. Emphasis on the socialization process of women, the history and literature of women, the politics and theory of the women's rights movement, and the changing role of women in society. Not open to students with credit in GS 12100. Typically offered Fall Spring Summer.

### **WOST 20800 - Nutrition in Women's Health**

Credit Hours: 3.00. Exploration of women's health issues with emphasis on nutrition. Review of current research in normal and preventative nutrition throughout the lifecycle. Focus on women as individuals and on those who counsel and educate women. Course does not meet nutrition competency requirements for Nursing, Early Childhood Education or Hospital and Tourism Management majors. Not open to students with credit in F&N 208.. Typically offered Summer Fall Spring.

### **WOST 32000 - By And About Women**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. (ENGL 32000) Course employs feminist, interdisciplinary perspectives to examine representations of gender and sexuality in drama, fiction, poetry, and prose, with emphasis on texts by women writers. A central concern is how power is distributed across social locations such as gender, race, and class. Instructor will determine genre, era, place, culture, theme and other foci. Typically offered Fall Spring Summer.

### **WOST 32400 - International Women's Literature**

Credit Hours: 3.00. Course presents an international perspective on women's social, political, economic and imaginative lives. It focuses on the literary efforts of women to question, challenge, and examine the conditions affecting their lives. The major emphasis will be on global literatures from Africa, the Americas, Asia, and the Middle East. This course is cross-listed with ENGL 32400. Not open to students with credit in ENGL 32400. Typically offered Fall Spring Summer.

### **WOST 33600 - Mothers And Daughters In Literature**

**Prerequisite(s):** ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. (ENGL 33600) Course acquaints students with a new body of literature by women. Students explore mother-daughter relationships as presented in this literature to enhance their understanding of feminist approaches to life. Typically offered Fall Spring Summer.

### **WOST 34000 - Literature By Women Of Color**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. This course focuses on literature written in English by women of color living in the United States. Writers included are Africa-American, Native-American, Asian-American, and Latin/Hispanic descent. The course introduces students to the emerging body of writing by women of color, heightening awareness and appreciation of these women's literary contributions. ENGL /WOST 34000 examines some of the cultural differences among these groups, as reflected in the literature. This course also explores obstacles, particularly those related to race, gender, and class, that women of color share. Finally, the course enhances understanding of the experiences shared by women from all cultures. This course is cross-listed as ENGL 34000. Not open to students with credit in ENGL 340. Typically offered Fall Spring Summer.

### **WOST 35000 - Social Psychology Of Marriage**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D- OR SOC 31200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Designed to provide an understanding of contemporary courtship, marriage, and family interaction as cultural, social, and social-psychological phenomena. Consideration of the major sources of marital strain and conflict within a heterogeneous, rapidly changing society. Not open to students who have had HDFS 35000 or SOC 35000. Typically offered Fall Spring Summer.

### **WOST 45000 - Sex Roles In Modern Society**

**Prerequisite(s):** SOC 35000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A critical examination of the complementary roles of men and women with particular attention to problems of role adjustment in the contemporary United States. The neo-feminist movement and countermovements. Role conflicts and adjustments in such areas as family, education, employment, and the political area. Not open to students with credit in SOC 45000. Typically offered Fall Spring Summer.

### **WOST 47000 - Women In The Media**

**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF D- OR COM 20100 FOR LEVEL UG WITH MIN. GRADE OF D- OR WOST 12100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Focusing on the contributions made by women in newspaper, television, film, and performance, this course will explore how women are shaping societal and cultural values. Not open to students with credit in COM 470. Typically offered Fall Spring Summer.

### **WOST 49000 - Topics In Women's Studies**

Credit Hours: 1.00 to 6.00. Topics vary. Typically offered Fall Spring Summer.

## **Sports Management**

### **SPTM 30100 - Practicum In Intercollegiate Athletics**

Credit Hours: 1.00. Training and practical experience of 150 hours in on-and-off campus intercollegiate athletic operations. Exposure to all aspects of the collegiate athletic industry, including away trips to other universities. Typically offered Fall Spring Summer.

### **SPTM 31200 - Organization And Management Of The Sports Industry**

Credit Hours: 3.00. Principles of planning, organizing and controlling all aspects/resources of the Sports Industry to maximize effectiveness and control in multiple sport business enterprises. Students will develop their own career pathways and research operations they expect to spend their career in post-graduation. Typically offered Fall Spring Summer.

### **SPTM 32200 - Facilities Design And Property Management**

Credit Hours: 3.00. Arrangement of multi-purpose facilities for efficient use of space. Design based upon safe established work flow patterns. Operation and maintenance of the physical plant within engineering standards for peak performance and longevity. Typically offered Fall Spring Summer.

### **SPTM 40200 - Internship In Sports Management**

**Prerequisite(s):** SPTM 30100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 2.00. Structured sports industry internship of 300-600 hours in an approved sports industry business setting. Requires internship agreement, site visit, and exposure to at least four functional areas of the operation. Comprehensive report(s) of the experience and evaluation of performance by student and site required. Typically offered Fall Spring Summer.

### **SPTM 41500 - Public/Private Sports Club Management**

Credit Hours: 3.00. A study of the organization and management structures, opportunities and operations within the private and public sports club industry. Emphasis on the manager's role and duties plus the financial aspects of budgeting and managing memberships and member services. Typically offered Fall Spring Summer.

### **SPTM 42000 - Sports Event Planning, Promotion And Media Relations**

Credit Hours: 3.00. Emphasis on logistical requirements and economic realities of on and off site event services. Practical application that will involve students in the planning, organizing and execution of sporting event(s). Also covers information releases and handling various media announcements. Typically offered Fall Spring Summer.

## **Women's, Gender, and Sexuality Studies**

### **WGSS 12100 - Introduction to Women's Studies**

Credit Hours: 3.00. An introduction to a women's studies perspective in various academic disciplines. Emphasis on the socialization process of women, the history and literature of women, the politics and theory of the women's rights movement, and the changing role of women in society. Not open to students with credit in GS 12100. Typically offered Fall Spring Summer.

### **WGSS 20800 - Nutrition in Women's Health**

Credit Hours: 3.00. Exploration of women's health issues with emphasis on nutrition. Review of current research in normal and preventative nutrition throughout the lifecycle. Focus on women as individuals and on those who counsel and educate women. Course does not meet nutrition competency requirements for Nursing, Early Childhood Education or Hospital and Tourism Management majors. Not open to students with credit in FN 20800. Typically offered Fall Spring Summer.

### **WGSS 32000 - By And About Women**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF D-



Credit Hours: 3.00. (ENGL 32000) Course employs feminist, interdisciplinary perspectives to examine representations of gender and sexuality in drama, fiction, poetry, and prose, with emphasis on texts by women writers. A central concern is how power is distributed across social locations such as gender, race, and class. Instructor will determine genre, era, place, culture, theme and other foci. Typically offered Fall Spring Summer.

### **WGSS 32400 - International Women's Literature**

Credit Hours: 3.00. (ENGL 32400) Course presents an international perspective on women's social, political, economic and imaginative lives. It focuses on the literary efforts of women to question, challenge, and examine the conditions affecting their lives. The major emphasis will be on global literatures from Africa, the Americas, Asia, and the Middle East. Not open to students with credit in ENGL 32400. Typically offered Fall Spring Summer.

### **WGSS 33600 - Mothers and Daughters In Literature**

**Prerequisite(s):** ENGL 10000 FOR LEVEL UG WITH MIN. GRADE OF B- OR ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10800 FOR LEVEL UG WITH MIN. GRADE OF C- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF C-

Credit Hours: 3.00. (ENGL 33600) Course acquaints students with a new body of literature by women. Students explore mother-daughter relationships as presented in this literature to enhance their understanding of feminist approaches to life. Typically offered Fall Spring Summer.

### **WGSS 34000 - Literature By Women Of Color**

**Prerequisite(s):** ENGL 10400 FOR LEVEL UG WITH MIN. GRADE OF D- OR ENGL 10100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. (ENGL 34000) This course focuses on literature written in English by women of color living in the United States. Writers included are Africa-American, Native-American, Asian-American, and Latin/Hispanic descent. The course introduces students to the emerging body of writing by women of color, heightening awareness and appreciation of these women's literary contributions. ENGL/WGSS 34000 examines some of the cultural differences among these groups, as reflected in the literature. This course also explores obstacles, particularly those related to race, gender, and class, that women of color share. Finally, the course enhances understanding of the experiences shared by women from all cultures. This course is cross-listed as ENGL 34000. Not open to students with credit in ENGL 34000. Typically offered Fall Spring Summer.

### **WGSS 35000 - Social Psychology Of Marriage**

**Prerequisite(s):** SOC 10000 FOR LEVEL UG WITH MIN. GRADE OF D- OR SOC 31200 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Designed to provide an understanding of contemporary courtship, marriage, and family interaction as cultural, social, and social-psychological phenomena. Consideration of the major sources of marital strain and conflict within a heterogeneous, rapidly changing society. Not open to students who have had CDFS 35000 or SOC 35000. Typically offered Fall Spring Summer.

### **WGSS 45000 - Sex Roles In Modern Society**

**Prerequisite(s):** SOC 35000 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. A critical examination of the complementary roles of men and women with particular attention to problems of role adjustment in the contemporary United States. The neo-feminist movement and countermovements. Role conflicts and adjustments in such areas as family, education, employment, and the political area. Not open to students with credit in SOC 45000. Typically offered Fall Spring Summer.

### **WGSS 47000 - Women In The Media**

**Prerequisite(s):** COM 11400 FOR LEVEL UG WITH MIN. GRADE OF D- OR COM 20100 FOR LEVEL UG WITH MIN. GRADE OF D- OR WOST 12100 FOR LEVEL UG WITH MIN. GRADE OF D-

Credit Hours: 3.00. Focusing on the contributions made by women in newspaper, television, film, and performance, this course will explore how women are shaping societal and cultural values. Not open to students with credit in COM 47000. Typically offered Fall Spring Summer.